

CARDIORESP CARE SCIENCE - AAS

Program Overview

Associate of Applied Science - Cardio-Respiratory Care Science

Student Learning Outcomes

The Cardio-Respiratory Care Science program will prepare graduates with demonstrated competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practice as performed by registered respiratory therapists (RRTs).

1. Provide safe, quality, evidenced-based respiratory care to patients in multidisciplinary healthcare settings.
2. Exhibit professionalism and interpersonal communication skills in the healthcare setting when working with members of the interprofessional team, the patient, and the patient's support persons.
3. Use critical thinking to assess for, interpret, apply and evaluate relevant clinical information to care for patients in the role of a respiratory therapist.
4. Demonstrate technical proficiency consistent with best practices in all the skills necessary to fulfill the role as a respiratory therapist.

Great Basin College offers a two-year program leading to an Associate of Applied Science Cardio-Respiratory Care Science. Great Basin College is accredited by the Northwest Commission on Colleges and Universities (NWCCU).

The Associate of Applied Science Cardio-Respiratory program (CoARC program number 200672) at Great Basin College at the Elko, Winnemucca, and Reno locations hold Provisional Accreditation for Respiratory Care (www.coarc.com). This status signifies that a program with an Approval of Intent has demonstrated sufficient compliance with the Standards (through submission of an acceptable Provisional Accreditation Self-Study Report (PSSR) and any other documentation required by the CoARC, as well as satisfactory completion of an initial on-site visit), to be allowed to admit students. It is recognized as an accredited program by the National Board for Respiratory Care (NBRC), which provides enrolled students who complete the program with eligibility for the Respiratory Care Credentialing Examination(s). The program will remain on Provisional Accreditation until it achieves Continuing Accreditation.

Commission on Accreditation for Respiratory Care (CoARC). 264 Precision Blvd, Telford, TN 37690 (817) 283.2835. View the public information disclosed by the CoARC regarding this program at <https://coarc.com/students/programmatic-outcomes-data/>.

The mission of Great Basin College's AAS—Cardio-Respiratory Care Science program is to provide an accessible, student-centered, post-secondary respiratory therapy education that prepares graduates for entry level respiratory therapy practice in a variety of structured healthcare settings. The curriculum integrates courses in respiratory therapy with general education requirements. Laboratory and clinical experience are offered at the college, local hospitals, long-term care centers, and community health facilities.

Enrollment in the program is limited, and students are admitted only in the fall semester. Selection is made using a point system. Additional points will be awarded for veteran applicants and students in the CTE pathway program.

Non-respiratory therapy and pre-respiratory therapy students may not take any of the courses that begin with the CRS designation prior to admission to the AAS degree in Cardio-Respiratory Care Science program. Students who have declared cardio-respiratory care science as their major are designated as pre-respiratory therapy students. Students who have applied for and been accepted into the Associate of Applied Science in Cardio-Respiratory Care Science program are designated respiratory therapy students.

Students who do not have an ACT or SAT score and who have not started the English and mathematics

requirements, must complete the English/ mathematics placement tests. There is no charge for this test, and it must be taken prior to enrolling in prerequisite courses. The placement tests are available at the Academic Success Center and at GBC centers. For more information and testing times, call 775.327.2247.

Year of admission to the Associate in Cardio-Respiratory Care Science program determines catalog year and course requirements.

The GBC AAS Cardio-Respiratory Care Science program will not recognize completed anatomy or physiology courses older than five years or repeated more than three times.

Questions about the AAS in Cardio-Respiratory Care Science program or the application process can be directed to the School of Health Sciences and Behavioral Health at 775.327.2317.

Admission to Associate of Applied Science in Cardio-Respiratory Care Science

College courses taken at another institution will be evaluated by the admissions and records office for transfer and acceptance. All courses must have been completed

at a regionally accredited institution of higher education. All previous coursework must be submitted from the institution where it was completed as an official transcript. Transcript copies are not accepted. Respiratory therapy courses taken at another institution will not be recognized. Prior work experience will not count toward completion of any CRS coursework.

Upon successful completion of the program, graduates will have earned an Associate of Applied Science in Cardio- Respiratory Care Science. Cardio-Respiratory Care Science program graduates are eligible to take the National Board of Respiratory Care (NBRC).

Graduation from an accredited program is only one of the requirements and does not mean automatic licensure as a respiratory therapist.

The Nevada State Board of Medical Examiners requires all applicants for Respiratory Therapy licenses to answer screening questions. These questions address criminal convictions, discipline in another state, chemical dependency, and medical and mental health conditions. In addition, all applicants must submit their fingerprints for an FBI and State of Nevada criminal background check. For more information, visit <https://medboard.nv.gov/> or call Toll Free: 888.890.8210.

AAS in Cardio-Respiratory Care Science Program Requirements

Students must provide evidence of a satisfactory physical examination within the preceding six months, validating the following psychomotor requirements:

- Assess clients through auscultation, percussion, palpation, and other diagnostic maneuvers.
- Manipulate equipment necessary to assist the individual, family, and/or group to desired outcomes.
- Lift and move individuals and/or groups of individuals to provide safe care and emergency treatment.
- Perform cardiopulmonary resuscitation.
- Perform independently of others.
- Possess cognitive abilities of measure, calculate dosages, reason, analyze, and synthesize.

Additional Fees

Respiratory therapy students follow the fee schedule and refund policy described on page 67. In addition to tuition there are other costs specific to the Associate of Applied Science in Cardio-Respiratory Care Science program.

These fees are subject to change. A differential fee is an additional fee for students enrolled in all AAS— Cardio- Respiratory Care courses. Students in this program will also have a distance education fee that applies to IAV, online, and hybrid classes. An approximation of the additional expenses include:

Requirements for Application

- GPA of 2.0 or higher on any previous college coursework.
- Minimum grade of C or higher in any courses applied to the AAS Cardio-Respiratory Care program.
- Completed applications for both GBC and the Cardio-Respiratory Care Program must be received by admissions and records no later than 5 p.m., May 31st.

More detailed information about the admission process will be provided in the application packet.

Student selection and admission is completed one time per year. Preference is given to GBC service area students. Applicants not selected for the program will not be carried forward to the next year's program and must re-apply and meet the requirements prevailing at the time.

AAS in Cardio-Respiratory Care Course Requirements

In order to maintain good standing in the AAS in Cardio- Respiratory Care program, a student must:

- Maintain a minimum grade of C (e.g., 76% or better) in all respiratory therapy courses,
- Comply with requirements set forth in the Associate of Applied Science Cardio-Respiratory Care program student handbook.
- Attain a minimum grade of C or higher in any non-cardio-respiratory care course applied to the Associate of Applied Science Cardio-Respiratory Care degree.

Prerequisite Requirements

One course required

MATH 120 Fund of College Math

3 Credits

Includes set theory, logic, consumer mathematics, measurement, geometry, probability, and statistics. Course is broad in scope, emphasizing applications. It is recommended that students have completed prerequisites within two years of enrolling in this course.

MATH 120E Fund of College Math Expanded

3 Credits

Fundamentals of College Mathematics with Corequisite Support: Includes real numbers, consumer mathematics, variation, functions, relations, graphs, geometry, probability, and statistics. Course is broad in scope, emphasizing applications. Fulfills the lower-division mathematics requirement for a Bachelor of Arts Degree. Satisfies mathematics requirement for baccalaureate degrees.

MATH 126 Precalculus I 3 Credits

A third course in algebra that stresses polynomial, quadratic, rational, exponential, and logarithmic functions, including their graphs and applications; complex numbers; systems of equations; and basic operations with matrices and determinants, including Cramer's rule. It is recommended that students have completed prerequisites within two years of enrolling in this course.

MATH 126E Precalculus I Expanded 3 Credits

Precalculus I Expanded with Co-requisite support: Includes equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices and determinants; and binomial theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course.

STAT 152 Intro to Statistics 3 Credits

Includes descriptive statistics, probability models, random variables, statistical estimation and hypothesis testing, linear regression analysis, and other topics. Designed to show the dependence of statistics on probability. It is recommended that students have completed prerequisites within two years of enrolling in this course.

Biology Requirement (BIOL 100 or BIOL 190 is a science department requirement to be taken prior to or concurrently with BIOL 223)

BIOL 100 General Biology/Non Major 3 Credits

Basic biological concepts, interpretation and application of scientific methods, and effects of biological advances on society. Core curriculum science course; cannot be used for credit toward field of concentration in biology.

BIOL 190 Intro Cell/Molecular Biology 4 Credits

Structure and function of cells. Major molecules of life; composition and physiology of cellular organelles; cell metabolism, reproduction, motility, and gene function of both plant and animal cells. Required for biology majors. Concurrent enrollment in a corresponding lab section is required for this course.

BIOL 223 Human Anatomy & Physiology I 4 Credits

The morphology and physiology of cells, tissues, and the integumentary, skeletal, muscular, and nervous systems in a laboratory and lecture class. Designed for all life science majors but specifically for students in allied health programs. Concurrent enrollment in a corresponding lab section is required for this course.

BIOL 224 Anatomy & Physiology II 4 Credits

A continuation of Biology 223 with consideration of the circulatory, respiratory, digestive, excretory, endocrine, and reproductive systems; increased emphasis on body chemistry. Concurrent enrollment in a corresponding lab section is required for this course.

BIOL 251 General Microbiology 4 Credits

A laboratory and lecture course emphasizing taxonomy, morphology, physiology, infectious diseases, and ecology of microorganisms in addition to skills in aseptic procedures, isolation, and identification. Open to all life science majors and allied health majors.

General Education Requirements

English/Communications (two courses required): ENG 100 or ENG 101 and ENG 102 or ENG 107 and 108

ENG 100 Composition-Enhanced 5 Credits

Allows students to fulfill their first semester of English while completing the remediation process. Designed for students who did not place into ENG 101 on the placement test/writing sample, but did not score so low that they need ENG 95. Allows a student to refine specific skill deficiencies while completing the first semester of freshman composition (ENG 100 is equivalent to ENG 101). Students will have additional Academic Success Center requirements. Although it is a five-credit course, it does not replace ENG 102. After successful completion of ENG 100, a student must take ENG 102 to complete the general education requirement.

ENG 101 Composition I 3 Credits

Critical reading and writing of the expository essay. Emphasizes pre-writing, strategies for organization, and revision.

ENG 102 Composition II 3 Credits

Continuation of English 101. Emphasizes writing from sources, argument, the investigative paper, and research techniques.

ENG 107 Tech Communications I 3 Credits

Basic skills necessary for successful on-the-job communications including improved letter and report writing, persuasion, interviewing, process, mechanism description, and business and technical grammar.

ENG 108 Tech Communications II 3 Credits

Advanced letter and report writing techniques including proper word choice, tone, and structure. Business letters, memorandums, formal and informal reports, process, and mechanism descriptions.

Science (one course required)

ANTH 102 Physical Anthropology 3 Credits

Introduction to the study of how humans, Homo sapiens, have emerged as a species and come to dominate the planet by examining processes of human biological and cultural evolution. Topics include inheritance, the emergence of primates, fossil hominids, the development of technology, and biological variability among modern humans. Satisfies general education science.

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| FIS 100 | Introduction to Film | 3 Credits |
| Introduction to the historical development of film as art. Considers the development of cinematic techniques (i.e., cinematography, editing, sound, etc.), cinematic genres (i.e., the western, romantic comedy, etc.) and narrative elements (i.e., plot, character, conflict, etc.) as exemplified by the work of major American and international directors. | | |
| FREN 111 | First Year French I | 3-4 Credits |
| Development of language skills through practice in listening, speaking, reading, writing, and structural analysis. Language practice required. | | |
| FREN 112 | First Year French II | 3-4 Credits |
| A continuation of FREN 111. Language practice required. | | |
| HIST 208 | World History I | 3 Credits |
| Survey of world civilizations to 1600. Examines societies, cultures, and issues relative to Africa, the Americas, Asia, Europe, the Middle East and Oceania. | | |
| HIST 209 | World History II | 3 Credits |
| Survey of world civilizations since 1600. Examines historical societies, cultures, and issues relative to Africa, the Americas, Asia, Europe, the Middle East, and Oceania. | | |
| HUM 101 | Intro to Humanities I | 3 Credits |
| An introduction to humanities through a study of seven major arts including film, drama, music, literature, painting, sculpture, and architecture. Each of these arts is considered from the perspective of historical development, the elements used in creating works of art, meaning and form, and criticism and critical evaluation. | | |
| HUM 210 | Communicating Diversity | 3 Credits |
| Communicating Diversity is a lower division course designed to familiarize students with the fundamentals of diversity and how those are expressed through communication. Students will develop a deep understanding of the way in which we communicate race, gender, class, sexual orientation, nationality, religion, and physical/mental ability and how it impacts our daily lives. This course will take an intersectional approach to understanding diversity and seek communication strategies for inclusivity. Emphasis will be placed on defining and developing the critical thinking skills necessary to push past oppression, marginalization, and other issues centralized around diverse populations. Students will be encouraged to investigate and discover diversity issues, solutions, and concepts at the local and global level using case studies, current events, and other significant moments in history. | | |
| MUS 101 | Music Fundamentals | 3 Credits |
| Notation, terminology, intervals, and scales. Designed to furnish a foundation for musicianship. Recommended for teachers in public schools and all others desiring a basic music background. | | |
| MUS 121 | Music Appreciation | 3 Credits |
| The historical and cultural background of music and origins to the twentieth century. | | |
| PHIL 101 | Intro to Philosophy | 3 Credits |
| Basic problems in different areas of philosophy such as ethics, political theory, metaphysics, and epistemology. | | |
| PHIL 102 | Critical Thinking | 3 Credits |
| Covers non-symbolic introduction to logical thinking in everyday life, law, politics, science, advertising; common fallacies; and the uses of language, including techniques of persuasion. | | |
| PHIL 135 | Introduction to Ethics | 3 Credits |
| Introduction to Ethics: critical introduction to classical and modern ethical theories such as utilitarianism, deontology, and virtue ethics. Emphasis throughout on applying the theories in various contexts such as social, political, or interpersonal. The ultimate goal will be to allow students to clarify their own thinking and positions on important ethical issues confronting society today. | | |
| SPAN 111 | First Year Spanish I | 3 Credits |
| Development of language skills through practice in listening, speaking, reading, writing, and structural analysis. Language practice required. | | |
| SPAN 112 | First Yr Spanish II | 3 Credits |
| A continuation of SPAN 111. Language practice required. | | |
| SPAN 211 | Second Year Spanish I | 3 Credits |
| Considers structural review, conversation and writing, and readings in modern literature. | | |
| THTR 100 | Introduction to Theatre | 3 Credits |
| A survey of the basic principles, facts, and theories providing an understanding of the art of theatre. Course also includes a special focus on the practical technical aspects of the theatre and on live theatre experiences. | | |
| THTR 105 | Introduction to Acting I | 3 Credits |
| Examines acting fundamentals and focuses on development of vocal, physical, and creative tools to be used on stage. | | |
| THTR 121 | Stage Makeup | 3 Credits |
| This course focuses on the history of makeup and basic approaches to applying make-up for the stage and screen. Make-up supplies will be studied, as well as techniques for corrective, old-age, character, stylized, and special effects makeup. | | |
| THTR 204 | Theatre Technology I | 3 Credits |
| Lecture and discussion encompassing the philosophy and techniques of technical theatre. | | |

WELD 200 Metal Art 3 Credits

This course is designed to give the student the basic understanding of two dimensional 2D and three-dimensional 3D metal art. Also covered in this course we will discuss different Cutting, Welding and metal finishing techniques that are used in this discipline as it relates to metal art.

U.S. and Nevada Constitutions: HIST 101 and HIST 102 or PSC 101

HIST 101 U.S. History to 1877 3 Credits

Survey of U.S. political, social, economic, diplomatic, and cultural development from colonial times through Reconstruction. When taken with HIST 102 satisfies the GBC General Education American Constitutions and Institutions Requirement. HIST 101 and 102 need not be taken sequentially. Either class may be taken alone.

HIST 102 U.S. History Since 1877 3 Credits

Survey of U.S. political, social, economic, diplomatic, and cultural development from 1877 to the present. Course satisfies the Nevada Constitution Requirement. When taken with HIST 101 satisfies the GBC General Education American Constitutions and Institutions Requirement. Can be used to satisfy the Nevada Constitution Requirement for out-of-state transfer students who have previously satisfied the United States Constitution Requirement. HIST 101 and 102 need not be taken sequentially. Either class may be taken alone.

PSC 101 Intro American Politics 3 Credits

A survey of United States, national, state, and local governments with emphasis on the cultural aspects of the governing process. Satisfies the legislative requirement for the United States and Nevada Constitutions.

Social Science

PSY 101 Gen Psychology 3 Credits

Survey of the discipline introducing psychological theories, research methods, and principles of behavior.

Human Relations

HMS 200 Ethics in Human Services 3 Credits

Real life applications for personal and professional boundaries, beliefs, ethics, values, morals, and codes of conduct in human relationships using ethical decision-making, problem-solving, and critical-thinking activities are emphasized. This course may be repeated up to three times for continuing education credit. (Check with individual licensing boards prior to registering).

Technology (embedded into cardiorespiratory curriculum)

Program Requirements

CRS 100 Intro to Resp Care & Procedure 4 Credits

Introduction to Respiratory Therapy is a study of the respiratory therapist's role as a member of the medical team. Gas laws, physics, physiology, medical equipment terminology are taught. In addition, it provides the student with an in-depth understanding of medical gas administration, humidity and aerosol therapy, safety systems, airway management and infection control. Students will also learn the mechanical devices utilized to maintain patent airways and the various utilities in the treatment of respiratory and cardiac arrest Laboratory exercises provide students with an opportunity to develop skills.

CRS 115 Clinical Practicum I 4 Credits

This course introduces the student to the hospital environment. The student studies the relationship of the respiratory care department with other medical departments in the hospital. The student learns charting, patient rounds, respiratory equipment modalities, medication administration, and bronchial hygiene therapy.

CRS 116 Respiratory Pharmacology 3 Credits

This course introduces the students to the medications utilized in the treatment of patients with acute and chronic cardiopulmonary disorders. This course will also present a pharmacological basis of cardiorespiratory interventions. Additionally, integrate this knowledge with aerosol medication administration.

CRS 123 Respiratory Care Assessment 3 Credits

This course covers essential information regarding common respiratory diseases. This course will also provide the student with a description of the anatomic alterations of the lungs, etiology of the disease process, an overview of the cardiopulmonary clinical manifestations associated with the disorder, and management of the respiratory system. In addition, the course is designed to provide students with the opportunity to develop informational gathering and decision-making skills in the diagnosis and treatment of patients with cardiopulmonary or related disorders.

CRS 124 Adv Pract Resp Care and Proc 4 Credits

Advanced Practice Respiratory Care is a study of the respiratory therapist's role as a member of the critical care team. The course provides a continuation of knowledge and skills of respiratory care. Students will learn how to interpret arterial blood gas values and practice the arterial puncture/technique on a mannequin arm in the lab. The students will be introduced to critical care equipment, such as advanced artificial airways, machines that provide non-invasive ventilation and invasive ventilation. Procedures that involved assisting the physician for the therapeutic and diagnostic purposes is another topic in this course.

CRS 125 Clinical Practicum II 4 Credits

This course provides the appropriate setting for the continuation of practicing and refining skills obtained throughout the course of the initial clinical experience. The student is provided the opportunity to administer medication through various types of therapy. They will also perform cardiopulmonary resuscitation, perform airway care and management, infection control procedures, patient assessments, apply non-invasive ventilation therapy, and evaluate and record pertinent data in the patient's chart.

CRS 215 Clinical Practicum III 4 Credits

This course gives the student an opportunity to develop their clinical skills of airway management, cardiopulmonary resuscitation, aerosol therapy, arterial puncture and analysis, oxygen therapy, hyperinflation therapy and patient evaluation rounds. In addition, the student will begin learning basic mechanical ventilation concepts. Students will have exposure to the ICU's during this rotation.

CRS 216 Continuity of Resp Care 3 Credits

This course will present cardiorespiratory care needs of the chronically ill, discharge planning, care management, patient education, alternative care sites, and home care. Psychological issues of geriatric care are discussed.

CRS 218 Resp Diagnostics and Lab**4 Credits**

This course is designed to provide the students with practices in the art of patient assessment and an understanding of diagnostic and monitoring procedures. The course content includes the collection, analysis, and interpretation of various pulmonary, laboratory, and hemodynamic data. The collected data will then lead the student to consider possible therapeutic interventions and evaluation of patient treatment. Attention is given to those fundamental physiological concepts that provide a foundation for discussion of cardiopulmonary pathophysiology and common cardiopulmonary disorders.

CRS 219 Neonate/Peds Resp Care and Lab**4 Credits**

This course provides a comprehensive overview of pediatric and neonatal respiratory care. Special considerations of respiratory care practice unique to pediatrics and neonatology are discussed. Topics include pediatric anatomy and physiology, fetal development, clinical assessment, oxygen therapy, airway management, mechanical ventilation, resuscitation, cardiopulmonary pathophysiology and disorders specific to this specialty profession within respiratory care.

CRS 223 Exam Seminar and Preparation**1 Credits**

This course content comprises management principles/concepts; professional and regulatory agencies pertinent to RC practice; principles of healthcare reimbursement; best practice and patient safety, and personnel management/supervision. Cultural competency, clinical controversies and ethical issues, as well as standards of professional behavior will be discussed. The course includes intense preparation for passing the standardized National Board for Respiratory Care exams required to earn the CRT and RRT credentials.

CRS 225 Clinical Practicum IV**4 Credits**

This course is designed to provide the respiratory care student with the opportunity to develop advanced skills in the management of ventilator patients in adult critical care areas. Students will also receive an introduction to the neonatal/pediatric intensive care units. In addition, rotations through specialty areas are provided. Emphasis is placed on patient evaluation and education, decision-making skills, communication, and critical thinking skills.

Suggested Course Sequence**1st Semester - Fall**

| Course | Credits |
|-------------------------|---------|
| English/Communications* | 3-5 |
| CRS 100 | 4 |
| CRS 123 | 3 |
| CRS 116 | 3 |
| PSC 101 | 3 |
| TOTAL | 16-18 |

*Choose with advisor

2nd Semester - Spring

| Course | Credits |
|-------------------------|---------|
| English/Communications* | 3 |
| CRS 115 | 4 |
| CRS 124 | 4 |
| CRS 125 | 4 |
| HMS 200 | 3 |
| TOTAL | 18 |

*Choose with advisor

3rd Semester - Summer

| Course | Credits |
|---------|---------|
| CRS 125 | 4 |
| CRS 215 | 4 |
| TOTAL | 8 |

4th Semester - Spring

| Course | Credits |
|----------|---------|
| PSY 101 | 3 |
| PHIL 102 | 3 |
| CRS 216 | 3 |
| CRS 219 | 4 |
| CRS 223 | 1 |
| CRS 225 | 4 |
| TOTAL | 18 |