



Bachelor of Applied Science Cardiopulmonary Sciences

The Bachelor of Applied Science in Cardiopulmonary Sciences program is a program designed for cardiovascular technologists and respiratory care professionals who want to advance their education. Applicants should hold one of the following credentials: Registered Respiratory Therapist (RRT) from the National Board for Respiratory Care *or* Registered Cardiovascular Invasive Specialist (RCIS) from Cardiovascular Credentialing International. On this foundation of skill, the proposed program will result in additional growth for professionals within the specialized area of Cardiopulmonary Sciences.

The program will provide cardiovascular professionals with a well-rounded general education in the arts and sciences as well as advanced understanding in Cardiopulmonary Sciences. The Cardiopulmonary Sciences B.A.S. provides career advancement for entry-level health profession practitioners. Students will develop management and leadership skills and gain a broader-based knowledge of healthcare delivery skills. The program offers a diverse population of students with innovative educational experiences and opportunities to meet the healthcare needs of the community they serve. The program provides a career and educational pathway for cardiovascular technicians and respiratory care professionals who have earned an associate of science degree in a related area, or who hold comparable certification and licensure to treat patients.

Program Highlights: The B.A.S. in Cardiopulmonary Sciences program includes courses in professional issues, advanced pharmacology, diagnosis and intervention, patient management, research, legal and ethical aspects of healthcare, pathophysiology, leadership, and community health. Courses are offered in an online or blend of online and traditional formats to accommodate students' various schedules and learning preferences. Students may select from an array of electives to compliment their learning. Courses are offered for full and part-time students. The program also provides a basis for continued education at the graduate level.

Career Opportunities: Cardiopulmonary professionals will be able to further promote the expansion of services in their communities, such as diagnosis and treatment of sleep disorders, health promotion and disease prevention, patient education, pulmonary rehabilitation, disease-specific case management, and life support outside of the intensive care unit. Changes in health care policy, regulation, and reimbursements have required professionals to adopt these expanded roles, work more independently in settings across the continuum of care, and collaborate as partners on the healthcare delivery team.

Admission Requirements: In addition to fulfilling the entrance requirements for Edison State College, Applicants for the B.A.S. in Cardiopulmonary Sciences must meet the following criteria:

1. Completion of an Associate in Science (A.S.) degree in Cardiovascular Technology or Respiratory Care. Students with a minimum of 60 transferable hours, with all general education requirements and prerequisites met, may apply for admission.
2. Possess, or be eligible for, licensure, certification or registration from the State in which the applicant is practicing. Applicants should hold one of the following credentials: Registered Respiratory Therapist (RRT) from the National Board for Respiratory Care or Registered Cardiovascular Invasive Specialist (RCIS) from Cardiovascular Credentialing International.
3. Applicants must complete ENC 1101 Composition I, ENC 1102 Composition II, and one college level mathematics course with grades of 'C' or higher prior to enrollment in any upper division program courses.
4. Have a grade point average of at least 2.0 on a 4.0 scale for the general education component of undergraduate studies or have completed the requirements for a baccalaureate degree with a minimum grade point average of 2.0 on a 4.0 scale from any college or university accredited by a regional accrediting association as defined by State Board of Education rule or any college or university otherwise approved pursuant to State Board of Education rule.

B.A.S. CARDIOPULMONARY SCIENCES

GENERAL EDUCATION REQUIREMENTS

	Credit Hours
*ENC 1101	3
*ENC 1102	3
*SPC 1017 or SPC 2023.....	3
Humanities.....	6
to include 3 credits writing intensive	
Social Sciences to include one WOH or EUH course	9
*College Level Mathematics	6
**Natural Sciences w/Lab	6
TOTAL	36

***Required Program Prerequisites (grades of C or better) and electives for the Associate in Arts Degree:**

** BSC 1093C Anatomy and Physiology I	
** BSC 1094C Anatomy and Physiology II	
** BSC 1010/L	
PHY 1007 Physics for Health Professions	
**MCB 2010C Microbiology	
CGS 1000 Computer Literacy (or comparable course)	
TOTAL	17

*denotes Required Common Course Prerequisites within Gen Ed
 **courses can be used to satisfy general education requirements in natural sciences

Prior to enrollment in any 3000 or 4000 level courses, students must complete ENC 1101, ENC 1102, and one college level math course with grades of 'C' or higher.

Elective Hours (from AS Degree)31

Upper Division Credit hours.....36

TOTAL DEGREE CREDIT HOURS 120

***Upper Division Core Requirements (30 credit hours):**

HSC 4159 Advanced Medical Pharmacology.....	3
HSC 4550(5) Pathophysiologic Mechanisms.....	3
HSC 4653 Health Care Ethics.....	3
RET 4034 Problems in Patient Management.....	3
RET 4284 Cardiopulmonary Diagnostics.....	3
RET 4285 Cardiopulmonary Diagnostics and Intervention.....	3
RET 4536 Cardiopulmonary Rehabilitation.....	3
RET 4715 Advanced Neonatal Medicine.....	3
RET 4912 Research Methods.....	3
RET 4934 Selected Topics in Cardiopulmonary Science	3

***Upper Division Electives (6 credit hours):**

HSA 4184 Leadership and Management in Healthcare.....	3
MAN 3301 Human Resources Management.....	3
HSA 3430 Health Care Economics.....	3
HSA 3113 Contemporary Issues in Health Care...3	
EDF 3214 Human Development and Learning.....	3
ISC 3120 Scientific Processes.....	3
HSC 3201 Community Health.....	3
RET 4503 Chest Medicine.....	3

*courses subject to change; pending curriculum development and approval

Students must fulfill a foreign language requirement for graduation either through 2 years of the same language in high school or 2 semesters of the same language in college.

For additional information, please contact the Baccalaureate and University program office by calling (239) 489-9295. For admission and graduation requirements, refer to the appropriate section of the College Catalog.

Information is available online at:
<http://www.edison.edu/academics/>

Program is pending formal SACS approval

**Upper Division Course Descriptions
B.A. S. in Cardiopulmonary Sciences**

Core Requirements:

HSC 4159 ADVANCED MEDICAL PHARMACOLOGY – BAS

3 class hours

3 Credits

This course builds on the foundation of pharmacologic practice for RC and CVT Professionals for safe, effective administration of therapeutic drugs via the oral, aerosol and parenteral routes. An emphasis is placed on agents with specific application to Cardiopulmonary systems as well as analgesic, sedation and anesthetic agents for critical and emergency care.

HSC 4550(5) PATHOPHYSIOLOGIC MECHANISMS – BAS

3 class hours

3 credits

The advanced diagnostic process is emphasized in this course with focus upon the causes of Cardio Pulmonary disease and injuries that impact the CP System structure and function. Disease etiology and pathogenesis of pulmonary disease as well as potential therapeutic actions are developed with critical thinking in response to the diagnostic process and treatment choice are also emphasized.

HSC 4653 HEALTH CARE ETHICS – BAS

3 class hours

3 credits

The sociological and medical-legal aspects of patient care are explored through discussion and situation analysis in this course with an emphasis on Cardiac and Pulmonary care issues.

RET 4034 PROBLEMS IN PATIENT MANAGEMENT - BAS

3 class hours

3 credits

This is a case based course that identifies the problems associated with complex patient management issues in the diagnostic and acute care environments. This course will make use of discussion and guest instruction from Interdisciplinary Health Care professionals

RET 4284 CARDIOPULMONARY DIAGNOSTICS - BAS

3 class hours

3 credits

Advanced Non-Invasive Cardiac and Pulmonary Diagnostic techniques, to include but not be limited to, Echocardiography, Stress testing, Pulmonary and Sleep Disorders assessment are explored in depth.

RET 4285 CARDIOPULMONARY DIAGNOSTICS AND INTERVENTION – BAS

3 class hours

3 credits

Advanced Invasive Cardiac and Pulmonary Diagnostic techniques, to include but not be limited to, advanced Cardiac Catheterization Lab procedures, Intra Vascular Interventions and related chemical and mechanical devices for Cardiopulmonary intervention are explored, in depth.

RET 4503 CHEST MEDICINE - BAS

3 class hours

3 credits

This course emphasizes the development of a comprehensive treatment plan for specific Cardiac or Pulmonary disorders.

RET 4536 CARDIOPULMONARY REHABILITATION - BAS

3 class hours

3 credits

The Principles that underlie the development, implementation and management of cardiopulmonary rehabilitation and reconditioning programs are described and analyzed.

Advanced Non-Invasive Cardiac and Pulmonary Diagnostic techniques, to include but not be limited to, Echocardiography, Stress testing, Pulmonary and Sleep Disorders assessment are explored in depth.

RET 4715 ADVANCED NEONATAL MEDICINE - BAS

3 class hours

3 credits

The Principles that underlie fetal developmental and congenital pathology with an emphasis on advanced practice for neonatology and cardiac care are discussed and analyzed. The practice issues for the Neonatal Intensive care unit and Pediatric Cath. lab are also reviewed.

RET 4912 RESEARCH METHODS – BAS

3 class hours

3 credits

The statistical analysis tools and organizational principles that underpin Research practices for evidence based medicine are surveyed. Specific literature-based examples are used to provide the basis for the presentation of research methods in clinical practice.

RET 4934 SELECTED TOPICS IN CARDIOPULMONARY SCIENCE - BAS

3 class hours

3 credits

This class is designed to enable the student to analyze and present a specific contemporary problem(s) in adult critical care, Cardiopulmonary Departmental administration or Invasive Cardiology Practice.

***Upper Division Electives (6 credit hours):**

EDF 3214 HUMAN DEVELOPMENT AND LEARNING - BS

3 class hours

3 credits

This course is designed to cover principles of learning, teacher candidate development, and their applications to learning/teaching situations. Self concept, motivation, views of intelligence, and assessment are examined with opportunities to analyze teaching/learning episodes and to develop a repertoire of teaching approaches. Emphasis is placed on the interaction between the role of the teacher and the needs and learning styles of students at various developmental ages and stages. Teacher candidates will be required to complete five hours of foundation field experience.

HSA 3113 CONTEMPORARY ISSUES IN HEALTH CARE - BAS

3 class hours

3 credits

This seminar explores the changing face of Health Care as regards political, medical and social trends that influence both health care delivery and patient care.

HSA 3430 HEALTH CARE ECONOMICS - BAS

3 class hours

3 credits

This course provides an application of economic principles to analyze how various economic incentives affect patient, providers, and policy maker behavior in the delivery of modern healthcare.

HSC 3201 COMMUNITY HEALTH - BAS

3 class hours

3 credits

The course offers a contrast for the causes and management of human disease in urban and rural settings. Community-acquired diseases and resistant microorganisms are a focal area of study.

HSA 4184 LEADERSHIP AND MANAGEMENT IN HEALTHCARE - BAS

3 class hours

3 credits

The course provides both a general description and analysis of the management practices for the various health care organizations including but not limited to hospitals, long term care facilities, diagnostic centers and private physician practice.

ISC 3120 SCIENTIFIC PROCESSES - BAS

3 class hours

3 credits

Introduction to the philosophy, methodology and ethics of scientific practice via classroom discussion and literature review. Focus on philosophical and practical differences between physical & historical science; hypothesis generation and testing; experimental design; construction of a research proposal; composition of a scientific paper; oral presentation; and critical review.

MAN 3301 HUMAN RESOURCES MANAGEMENT - BAS

3 class hours

3 credits

This course analyzes modern methods and theories in human resources management, personal administration. Topics include recruitment, promotion, performance evaluation, dismissal, and training.