Emergency Medical Science

The Emergency Medical Science curriculum is designed to prepare graduates for careers as entry-level paramedics. The program can provide students with an associate degree, thus allowing them to advance their emergency medical services (EMS) careers.

The curriculum is divided into two paths: traditional and bridge

1. Traditional path: Students that have no EMS background.
2. Bridge path: Currently credentialed paramedics

While in the program, students acquire basic and advanced life support knowledge and skills in cutting edge learning environments including classroom and laboratory instruction. Students have unique hospital clinical opportunities at a regional level one trauma center. The field internship portion is completed at one of the nation's top EMS providers.

The core EMS curriculum focuses on EMS management, rescue operations management and methods of EMS education, giving graduates experience in all facets of EMS leadership.

Students who successfully complete the program are eligible for North Carolina and National Paramedic certification examinations.

Employment opportunities include: Emergency Medical Services (EMS) agencies, fire and rescue agencies, critical care transport services, special events, and government agencies.

For specific information about potential positions and wages in Emergency Medical Science employment, visit the Central Piedmont Career Coach (https://cpcc.emsicc.com/programs/emergency-medical-science-academic-program-for-credit/198260?radius=&region=50%20Mile%20Radius) website.

Emergency Medical Science (A45340)*

Degree Awarded

The Associate of Applied Science Degree - Emergency Medical Science is awarded by the college upon completion of this program.

Admissions

- A high school diploma or equivalent is required.
- Central Piedmont placement tests are required in English and mathematics. Developmental Studies for English and mathematics classes are available for students to build basic skills and knowledge.
- Consult with advisement counselor and attend an orientation session following placement testing.
- Meet with an EMS program advisor prior to initial registration.
- Many courses have prerequisites or co-requisites; check the Courses section for details.

Contact Information

The Emergency Medical Science Program is in the Public Safety Division of Central Piedmont. For more information, contact the Program Chair by phone at 704.330.2722, ext. 3274 or by email at emergency.medicalservices@cpcc.edu.

General Education Requirements		
Required Course:		
ENG 111	Writing and Inquiry	3.0
Research English		
Take 3 credits:		3.0
ENG 112	Writing and Research in the Disciplines	
ENG 113	Literature-Based Research	
ENG 114	Professional Research & Reporting	
Communication		
Take 3 credits:		3.0
COM 110	Introduction to Communication	
COM 231	Public Speaking	
Humanities and Fine Arts		
Take 3 credits:		3.0
ART 111	Art Appreciation	
ART 114	Art History Survey I	
ART 115	Art History Survey II	
HUM 120	Cultural Studies	
HUM 130	Myth in Human Culture	
MUS 110	Music Appreciation	
MUS 112	Introduction to Jazz	
PHI 215	Philosophical Issues	
PHI 240	Introduction to Ethics	
REL 110	World Religions	
Behavioral/Social Sciences		
Take 3 credits:		3.0
PSY 150	General Psychology	
SOC 210	Introduction to Sociology	
Mathematics		
Take 3 credits:		3.0
MAT 143	Quantitative Literacy	
MAT 152	Statistical Methods I	
MAT 171	Precalculus Algebra	
Major Requirements		
Required Courses		
EMS 110	EMT	9.0
BIO 163	Basic Anatomy & Physiology	5.0
Medical Terminology		
MED 120	Survey of Medical Terminology	2.0
Paramedic		
EMS 122	EMS Clinical Practicum I	1.0
EMS 130	Pharmacology	4.0
EMS 131	Advanced Airway Management	2.0
EMS 160	Cardiology I	3.0
EMS 220	Cardiology II	3.0
EMS 221	EMS Clinical Practicum II	2.0
EMS 231	EMS Clinical Practicum III	3.0
EMS 240	Patients With Special Challenges	2.0
EMS 241	EMS Clinical Practicum IV	4.0
EMS 250	Medical Emergencies	4.0
EMS 260	Trauma Emergencies	2.0
EMS 270	Life Span Emergencies	4.0

EMS 285	EMS Capstone	2.0
Select 4.0 credits from the following:		4.0
EMS 125	EMS Instructor Methodology	
EMS 150	Emergency Vehicles and EMS Communication	
EMS 235	EMS Management	
EMS 140	Rescue Scene Management	
EMS 280	EMS Bridging Course	
Total Credits		74

No diplomas are offered in Emergency Medical Science.

No certificates are offered in Emergency Medical Science.

EMS 110AB. EMT. 4.0 Credits. Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary to achieve North Carolina State or National Registry EMT certification.

EMS 110BB. EMT. 4.0 Credits. Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary to achieve North Carolina State or National Registry EMT certification.
Corequisites: Take EMS 110AB

EMS 110. EMT. 8.0 Credits. Class-6.0. Clinical-0.0. Lab-6.0. Work-0.0
This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary to achieve North Carolina State or National Registry EMT certification.

EMS 120. Advanced EMT. 6.0 Credits. Class-4.0. Clinical-0.0. Lab-6.0. Work-0.0
This course is designed to provide the essential information on interventions/treatments appropriate to the Advanced EMT and is required for Advanced EMT certification. Topics include airway management, automatic external defibrillation, cardiac electrophysiology, vascular access, acid-base balance, pharmacology, medical emergencies, traumatic injuries, and fluids and electrolytes. Upon completion, students should be able to properly obtain vascular access, manage medical and trauma patients, utilize simple and advanced airways, and correctly interpret arterial blood gases.
Prerequisites: Take EMS 110
Corequisites: Take EMS 121

EMS 121. AEMT Clinical Practicum. 2.0 Credits. Class-0.0. Clinical-6.0. Lab-0.0. Work-0.0
This course provides the hospital and field internship/clinical experiences required in preparation for the Advanced EMT certification. Emphasis is placed on performing patient assessments, treatments, and interactions appropriate at the Advanced EMT level of care. Upon completion, students should be able to demonstrate competence at the Advanced EMT skill level.
Prerequisites: Take EMS 110
Corequisites: Take EMS 120

EMS 122. EMS Clinical Practicum I. 1.0 Credit. Class-0.0. Clinical-3.0. Lab-0.0. Work-0.0
This course provides the introductory hospital clinical experience for the paramedic student. Emphasis is placed on mastering fundamental paramedic skills. Upon completion, students should be able to demonstrate competence with fundamental paramedic level skills.
Prerequisites: Take EMS 110
Corequisites: Take EMS 130

EMS 125. EMS Instructor Methodology. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-2.0. Work-0.0
This course covers the information needed to develop and instruct EMS courses. Topics include instructional methods, lesson plan development, time management skills, and theories of adult learning. Upon completion, students should be able to teach EMS courses and meet the North Carolina EMS requirements for instructor methodology.

EMS 130. Pharmacology. 4.0 Credits. Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces the fundamental principles of pharmacology and medication administration and is required for paramedic certification. Topics include medical terminology, pharmacological concepts, weights, measures, drug calculations, vascular access for fluids and medication administration and legislation. Upon completion, students should be able to accurately calculate drug dosages, properly administer medications, and demonstrate general knowledge of pharmacology.
Prerequisites: Take EMS 110
Corequisites: Take EMS 122

EMS 131. Advanced Airway Management. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-2.0. Work-0.0
This course is designed to provide advanced airway management techniques and is required for paramedic certification. Topics include respiratory anatomy and physiology, airway/ventilation, adjuncts, surgical intervention, and rapid sequence intubation. Upon completion, students should be able to properly utilize all airway adjuncts and pharmacology associated with airway control and maintenance.
Prerequisites: Take EMS 110

EMS 140. Rescue Scene Management. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces rescue scene management. Topics include response to hazardous material conditions, incident command, and extrication of patients from a variety of situations. Upon completion, students should be able to recognize and manage rescue operations based upon initial and follow-up scene assessment.

EMS 150. Emergency Vehicles and EMS Communication. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-3.0. Work-0.0
This course covers the principles governing emergency vehicles, maintenance of emergency vehicles, and EMS communication equipment. Topics include applicable motor vehicle laws affecting emergency vehicle operation, defensive driving, collision avoidance techniques, communication systems, and information management systems. Upon completion, students should have a basic knowledge of emergency vehicles, maintenance, and communication needs.

EMS 160AB. Cardiology I. 1.0 Credit. Class-0.5. Clinical-0.0. Lab-1.5. Work-0.0
This course introduces the study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, electrophysiology, and basic rhythm interpretation in the monitoring leads. Upon completion, students should be able to recognize and interpret basic rhythms. This is the first part of a two course sequence.
Prerequisites: Take EMS 110

EMS 160BB. Cardiology I. 1.0 Credit. Class-0.5. Clinical-0.0. Lab-1.5. Work-0.0
This course introduces the study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, electrophysiology, and basic rhythm interpretation in the monitoring leads. Upon completion, students should be able to recognize and interpret basic rhythms. This is the second part of a two course sequence.
Prerequisites: Take EMS 110
Corequisites: Take EMS 160AB

EMS 160. Cardiology I. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces the study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, electrophysiology, and basic rhythm interpretation in the monitoring leads. Upon completion, students should be able to recognize and interpret basic rhythms.
Prerequisites: Take EMS 110

EMS 220. Cardiology II. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course provides an in-depth study of cardiovascular emergencies and is required for paramedic certification. Topics include assessment and treatment of cardiac emergencies, application and interpretation of advanced electrocardiography utilizing the twelve-lead ECG, cardiac pharmacology, and patient care. Upon completion, students should be able to assess and treat patients utilizing American Heart Association guidelines.
Prerequisites: Take All: EMS 122, EMS 130, and EMS 160

EMS 221. EMS Clinical Practicum II. 2.0 Credits. Class-0.0. Clinical-6.0. Lab-0.0. Work-0.0
This course provides clinical experiences in the hospital and/or field. Emphasis is placed on increasing the proficiency of students' skills and abilities in patient assessments and the delivery of care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care.
Prerequisites: Take All: EMS 122 and EMS 130

EMS 231AB. EMS Clinical Practicum III. 1.5 Credit. Class-0.0. Clinical-4.5. Lab-0.0. Work-0.0
This course provides clinical experiences in the hospital and/or field. Emphasis is placed on enhancing the students' skills and abilities in providing advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care.
Prerequisites: Take All: EMS 130 and EMS 221

EMS 231BB. EMS Clinical Practicum III. 1.5 Credit. Class-0.0. Clinical-4.5. Lab-0.0. Work-0.0
This course provides clinical experiences in the hospital and/or field. Emphasis is placed on enhancing the students' skills and abilities in providing advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care.
Prerequisites: Take All: EMS 130 and EMS 221
Corequisites: Take EMS 231AB

EMS 231. EMS Clinical Practicum III. 3.0 Credits. Class-0.0. Clinical-9.0. Lab-0.0. Work-0.0
This course provides clinical experiences in the hospital and/or field. Emphasis is placed on enhancing the students' skills and abilities in providing advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care.
Prerequisites: Take All: EMS 130 and EMS 221

EMS 235. EMS Management. 2.0 Credits. Class-2.0. Clinical-0.0. Lab-0.0. Work-0.0
This course stresses the principles of managing a modern emergency medical service system. Topics include structure and function of municipal governments, EMS grantsmanship, finance, regulatory agencies, system management, legal issues, and other topics relevant to the EMS manager. Upon completion, students should be able to understand the principles of managing emergency medical service delivery systems.

EMS 240. Patients With Special Challenges. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-2.0. Work-0.0
This course includes concepts of crisis intervention and techniques of interacting with patients with special challenges and is required for paramedic certification. Topics include appropriate intervention and interaction for neglected, abused, terminally ill, chronically ill, technology assisted, bariatric, physically challenged, mentally challenged, or assaulted patients as well as behavioral emergencies. Upon completion, students should be able to recognize and manage the care of patients with special challenges.
Prerequisites: Take All: EMS 122 and EMS 130

EMS 241. EMS Clinical Practicum IV. 4.0 Credits. Class-0.0. Clinical-12.0. Lab-0.0. Work-0.0
This course provides clinical experiences in the hospital and/or field. Emphasis is placed on mastering the skills/competencies required of the paramedic providing advanced-level care. Upon completion, students should be able to provide advanced-level patient care as an entry-level paramedic.
Prerequisites: Take All: EMS 130 and EMS 231

EMS 250. Medical Emergencies. 4.0 Credits. Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0
This course provides an in-depth study of medical conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include appropriate interventions/treatments for disorders/diseases/injuries affecting the following systems: respiratory, neurological, abdominal/gastrointestinal, endocrine, genitourinary, musculoskeletal, and immunological as well as toxicology, infectious diseases and diseases of the eyes, ears, nose and throat. Upon completion, students should be able to recognize, assess and manage the care of frequently encountered medical conditions based upon initial patient assessment.
Prerequisites: Take All: EMS 122 and EMS 130

EMS 260. Trauma Emergencies. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-3.0. Work-0.0
This course provides in-depth study of trauma including pharmacological interventions for conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include an overview of thoracic, abdominal, genitourinary, orthopedic, neurological, and multi-system trauma, soft tissue trauma of the head, neck, and face as well as environmental emergencies. Upon completion, students should be able to recognize and manage trauma situations based upon patient assessment and should adhere to standards of care.
Prerequisites: Take All: EMS 122 and EMS 130

EMS 270. Life Span Emergencies. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course covers medical/ethical/legal issues and the spectrum of age-specific emergencies from conception through death required for paramedic certification. Topics include gynecological, obstetrical, neonatal, pediatric, and geriatric emergencies and pharmacological therapeutics. Upon completion, students should be able to recognize and treat age-specific emergencies.
Prerequisites: Take All: EMS 122 and EMS 130

EMS 280. EMS Bridging Course. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-2.0. Work-0.0
This course is designed to bridge the knowledge gained in a continuing education paramedic program with the knowledge gained in an EMS curriculum program. Emphasis is placed on patient assessment, advanced electrocardiography utilizing the twelve-lead ECG, advanced pharmacology, the appropriate intervention and treatment of multi-system injuries/disorders, ethics, and NC laws and rules. Upon completion, students should be able to perform advanced patient assessment and practice skills.

EMS 285. EMS Capstone. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-3.0. Work-0.0
This course provides an opportunity to demonstrate problem-solving skills as a team leader in simulated patient scenarios and is required for paramedic certification. Emphasis is placed on critical thinking, integration of didactic and psychomotor skills, and effective performance in simulated emergency situations. Upon completion, students should be able to recognize and appropriately respond to a variety of EMS-related events.
Prerequisites: Take All: EMS 220, EMS 250, and EMS 260