

# Emergency Medical Science

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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, allowing them to advance their emergency medical services (EMS) careers.

The curriculum is divided into two paths: traditional and bridge

- a. Traditional path: Students that have no EMS background.
- b. 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 EMS education methods, giving graduates experience in all facets of EMS leadership.

Students who 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 website.

**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. 5.0 Credits.** Class-3.0. Clinical-3.0. 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. 9.0 Credits.** Class-6.0. Clinical-3.0. 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 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 competency with fundamental paramedic level skills.  
Prerequisites: Take EMS 110

**EMS 125. EMS Instructor Methodology. 3.0 Credits.** Class-2.0. 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

**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 must meet current guidelines for advanced airway management in the pre-hospital setting. 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 160. Cardiology I. 3.0 Credits.** Class-2.0. 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 rhythm interpretation. Upon completion, students should be able to recognize and interpret 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, cardiac pharmacology, and patient care. Upon completion, students should be able to manage the cardiac patient.

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 One: EMS 121 or EMS 122

**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 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 EMS 221

Corequisites: Take EMS 231AB

**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 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 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. 4.0 Credits.** Class-3.0. 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 provide currently credentialed state or national Paramedic students with the most current education trends in Paramedic Practice. Emphasis is placed on transitions in healthcare. Upon completion, students should be able to integrate emerging trends in pre-hospital care.

**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