

# EMERGENCY HEALTH SCIENCES

Paramedics and Emergency Medical Technicians (EMTs) have fulfilled prescribed requirements by a credentialing agency to practice the art and science of out-of-hospital medicine in conjunction with medical direction. EMS is most easily recognized when emergency vehicles or helicopters are seen responding to emergency incidents, but EMS is much more than a ride to the hospital. It is a system of coordinated response and emergency medical care, involving multiple people and agencies. A comprehensive EMS system is ready every day for every kind of emergency.

Paramedics and EMTs are integrated with other services and systems intended to maintain and enhance the community's health and safety and operate at the crossroads between health care, public health, and public safety.

The emerging roles and responsibilities of the paramedic include disaster management, health promotion, leadership and management, community paramedicine, and advanced practice. As the scope of service and practice continues to expand, the paramedic will function as a facilitator of access to care and part of a coordinated and seamless system of out-of-hospital medical care.

The Department of Emergency Health Sciences Paramedic Certification Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) by recommendation of the Committee on Accreditation of Educational Programs for the Emergency Services Professions (<https://coaemsp.org/>) (CoAEMSP). CoAEMSP may be contacted at 8301 Lakeview Parkway, Suite 111-312, Rowlett, TX 75088, phone 214-703-8445.

## THE DIVISION OF INITIAL EDUCATION

The Division of Initial Education offers programs primarily for the traditional (civilian) student and include:

- EMT certification
- Paramedic certification
- Bachelor of Science degree in Emergency Health Sciences

## Courses

### EMSP 1137. Emergency Procedures 1. 1 Credit Hour.

Application of emergency skills and procedures to simulated or live patients in a lab, clinical, or field setting. Integrate theory and reinforce skills introduced in other courses; and demonstrate comprehensive problem-solving techniques. This course encompasses various patient complaints, ages, pathologies, and all associated related skills and interventions.

### EMSP 1149. Pre-Hospital Trauma Life Support. 1 Credit Hour.

This course is an intense skill development in emergency field management, systematic rapid assessment, resuscitation, packaging, and transportation of patients. It includes experiences necessary to meet initial certification requirements.

### EMSP 1160. EMT Basic Clinical. 1 Credit Hour.

This course is a method of instruction providing detailed education, training, and work-based experience and direct patient/client care at a clinical site.

### EMSP 1161. Clinical 1. 1 Credit Hour.

This course is a method of instruction providing detailed education, training, and work-based experience and direct patient/client care at a clinical site.

### EMSP 1162. Clinical 2. 1 Credit Hour.

This course is a method of instruction providing detailed education, training, and work-based experience and direct patient/client care at a clinical site. Prerequisites: EMSP 1161.

### EMSP 1201. Anatomy and Physiology for Paramedic Practice. 2 Credit Hours.

A study of the structure and function of the human body, emphasis will be given to the study of cells and tissues, and anatomical and physiological interrelationships of the skeletal, muscular, nervous, and endocrine systems. This course is designed primarily for Paramedic students.

### EMSP 1238. Introduction to Paramedic Practice. 2 Credit Hours.

This course is an exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of the hospital. Course Learning Outcomes: At the completion of this module, the student will be required to understand the roles and responsibilities of a paramedic within the EMS system, apply the basic concepts of development and pathophysiology to assessment, and management of emergency patients.

### EMSP 1248. Emergency Pharmacology. 2 Credit Hours.

This course is a comprehensive course covering all aspects of the utilization of medications in treating emergencies. The course is designed to complement Cardiology, Special Populations, and Medical Emergency courses. Course Learning Objectives: The student will be required to display a command of general pharmacological terminology, general drug mechanisms, administration routes and administration procedures, and drug dose calculations. Students will be required to demonstrate understanding of the pharmacodynamics, pharmacokinetics, indications, contraindications, possible side effects, and common drug interactions of a variety of medications used in out-of-hospital medical care.

### EMSP 1256. Airway Management and Patient Assessment. 2 Credit Hours.

This course is a detailed study of the knowledge and skills required to reach competence in performing patient assessment and airway management. Course Learning Outcomes: At the completion of this module, the student will be required to take a proper history and perform a comprehensive physical exam on any patient, develop a patient care plan, communicate with others, and establish and/or maintain a patent airway, oxygenate, and ventilate a patient. Course fees: Lab materials fee \$150.

### EMSP 1301. Anatomy and Physiology for Paramedic Practice. 3 Credit Hours.

A study of the structure and function of the human body, emphasis will be given to the study of cells and tissues, and anatomical and physiological interrelationships of the skeletal, muscular, nervous, and endocrine systems. This course is designed primarily for Paramedic students.

### EMSP 1338. Introduction to Paramedic Practice. 3 Credit Hours.

Fundamental elements associated with emergency medical services to include preparatory practices, pathophysiology, medication administration, and related topics.

### EMSP 1344. Cardiology. 3 Credit Hours.

This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies. Prerequisite: EMSP 1244.

**EMSP 1348. Emergency Pharmacology. 3 Credit Hours.**

This course is a comprehensive course covering all aspects of the utilization of medications in treating emergencies. The course is designed to complement Cardiology, Special Populations, and Medical Emergency courses.

**EMSP 1356. Airway and Respiratory Management. 3 Credit Hours.**

Integrates complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patent airway, adequate mechanical ventilation, and respiration for patients of all ages. Course fees: Lab materials fee \$225.00.

**EMSP 1444. Cardiology. 4 Credit Hours.**

Assessment and management of patients with cardiac emergencies. Includes single and multi-lead ECG interpretation.

**EMSP 1501. EMT. 5 Credit Hours.**

This course is an introduction to the level of EMT Basic. It covers the skills necessary to provide emergency medical care at the basic life support level with an ambulance service or other specialized service.

**EMSP 2135. Advanced Cardiac Life Support. 1 Credit Hour.**

Instruction satisfies guidelines published by the American Heart Association for their ACLS core curriculum. The focus is on the initial management of the cardiopulmonary arrest patient, including advanced airway management techniques, cardiovascular pharmacology, defibrillation, and arrhythmia analysis. The student must review the current AHA ACLS text prior to class. Successful completion results in ACLS Provider Course Completion Card.

**EMSP 2138. EMS Operations. 1 Credit Hour.**

This is a course of study to prepare the paramedic to safely manage medical incidents, rescue situations, hazardous materials, and crime scenes.

**EMSP 2160. Paramedic Clinical 3. 1 Credit Hour.**

A method of instruction providing detailed education training and work-based experience and direct patient/client care at a clinical site. Prerequisites: EMSP 1162.

**EMSP 2161. Paramedic Clinical 4. 1 Credit Hour.**

This course is a clinical internship requiring each student under close supervision to complete a stated number of objectives in both the hospital and ambulance environment. Clinical courses to be taken in the sequence are listed above. Students are evaluated on cognitive, psychomotor, and affective domains. A numerical grade is awarded based on performance levels and course objectives met. Note: Successful completion of clinical requirements is based on objectives met along with the required Hours. It may be necessary for a student to complete more than the scheduled 375 hours in order to meet the objectives.

**EMSP 2164. Paramedic Practicum. 1 Credit Hour.**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**EMSP 2174. Practicum for Advanced Paramedic Practice. 1 Credit Hour.**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**EMSP 2177. Emergency Procedures 3. 1 Credit Hour.**

Application of emergency medical procedures.

**EMSP 2230. Special Populations. 2 Credit Hours.**

This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of ill or injured patients in nontraditional populations.

**EMSP 2237. Emergency Procedures 2. 2 Credit Hours.**

Application of emergency skills and procedures to simulated or live patients in a lab, clinical, or field setting. Integrate theory and reinforce skills introduced in other courses; and demonstrate comprehensive problem-solving techniques. This course encompasses various patient complaints, ages, pathologies, and all associated related skills and interventions. Course fees: \$100.

**EMSP 2238. EMS Operations. 2 Credit Hours.**

Knowledge and skills to safely manage multi-casualty incidents and rescue situations; utilize air medical resources; identify hazardous materials and other specialized incidents; operational roles and responsibilities to ensure safe patient, public, and personnel safety.

**EMSP 2243. Assessment-Based Management. 2 Credit Hours.**

This course is designed to provide for teaching and evaluating comprehensive assessment-based patient care management.

**EMSP 2244. Cardiology. 2 Credit Hours.**

A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies.

**EMSP 2255. Trauma Management. 2 Credit Hours.**

This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with traumatic injuries and to safely manage the scene of an emergency. At the completion of this module, the student will be required to integrate the pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the trauma patient.

**EMSP 2274. Medical Emergencies 2. 2 Credit Hours.**

Knowledge and skills in the assessment and management of patients with medical emergencies, including medical overview, neurology, gastroenterology, immunology, pulmonology, urology, hematology, endocrinology, toxicology, and other related topics.

**EMSP 2278. Advanced Pharmacology. 2 Credit Hours.**

Utilization of medications in treating emergency situations with special emphasis on basic principles of pharmacology. This includes the pharmacologic properties of major drug classes and individual drugs, and the clinical application of drug therapy and awareness.

**EMSP 2300. Preparation for Professional Practice. 3 Credit Hours.**

Theory and skills necessary for the management of cardiac, medical, trauma and pediatric patients specified by American Heart Association and National Association of EMTs guidelines. May be repeated multiple times to improve student proficiency.

**EMSP 2330. Special Populations. 3 Credit Hours.**

Knowledge and skills necessary to assess and manage ill or injured patients in diverse populations to include neonatology, pediatrics, geriatrics, and other related topics.

**EMSP 2334. Medical Emergencies 1. 3 Credit Hours.**

This course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with medical emergencies. At the completion of this module, students will be required to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the medical patient.

**EMSP 2355. Trauma Management. 3 Credit Hours.**

Knowledge and skills in the assessment and management of patients with traumatic injuries.

**EMSP 2371. Physical Exam and History Taking. 3 Credit Hours.**

The purpose of this course is to provide the learner with the ability to perform and work in non-traditional and rural settings. Learners will gain the skills of patient assessment, disease identification, health education, and preventative medicine. Learners are given the opportunity to study methods for understanding disease processes through proper techniques for eliciting a complete patient history and performing a thorough physical examination. (Successful completion of Physical Assessment & Airway Management and Physical Examination and History Taking satisfies the Physical Examination and History Taking course requirements for the EHS BS degree).

**EMSP 2376. Cardiology 2. 3 Credit Hours.**

A study of the fundamentals of electrocardiography with emphasis on the role of the 12-lead ECG for advanced paramedic and community paramedic practice. (Successful completion of Cardiology I and II satisfies the Electrocardiology in EHS course requirement for the EHS BS degree).

**EMSP 2378. Critical Care Paramedic. 3 Credit Hours.**

The purpose of this course is to provide the learner with advanced knowledge in critical care medicine and to prepare healthcare personnel to function as members of a critical care transport team. Topics will include monitoring technology, advanced procedures, diagnostic testing, and treatment of acutely critical patients. (Successful completion satisfies the Critical Care Paramedic course for the EHS BS degree.).

**EMSP 2434. Medical Emergencies. 4 Credit Hours.**

Knowledge and skills in the assessment and management of patients with medical emergencies, including medical overview, neurology, gastroenterology, immunology, pulmonology, urology, hematology, endocrinology, toxicology, and other related topics.

**EMSP 2443. Assessment-Based Management. 4 Credit Hours.**

A summative experience covering comprehensive, assessment-based patient care management for the paramedic level and preparation for national certification examination.

**EMSP 3001. Foundations of Emergency Health Sciences. 3 Credit Hours.**

This course is an introduction to EMSP. This course surveys the history, evolution, theoretical concepts, and clinical methods and techniques that support the practice of EMSP.

**EMSP 3003. Critical Care Medicine. 3 Credit Hours.**

This course is designed to provide advanced knowledge in critical care medicine. Topics will include monitoring technology, advanced procedures, diagnostic testing, and treatment of acutely critical patients.

**EMSP 3004. Pharmacology 1 for EMS Providers. 3 Credit Hours.**

This course is designed to provide the learner with a fundamental knowledge of the actions and therapeutic uses of drugs. The topics covered will include basic principles of drug action, pharmacokinetics, autonomic and cardiovascular pharmacology, neuropharmacology, toxicology, endocrine pharmacology, and respiratory tract pharmacology. Open for Cross Enrollment on Space Available Basis.

**EMSP 3005. Foundations of EMS Infection Control. 3 Credit Hours.**

This course reviews the basics of infectious pathogens, disease transmission, and infection control in the EMS setting. Topics include laws applicable to infection control, risks for disease transmission, infection prevention, exposure control plan components, vaccinations, and post-exposure management. This course is also designed to prepare students for the Certified Designated Infection Control Officer (DICO-C) examination developed by the National Association of Public Safety Infection Control Officers (NAPSICO) and offered by the International Board of Specialty Certification (IBSC). Open for Cross Enrollment on Space Available Basis.

**EMSP 3006. Electrocardiology in Emergency Health Science. 3 Credit Hours.**

A study of the fundamentals of electrocardiology, this course will emphasize the role of the 12-lead ECG in out-of-hospital medical care. The purpose of this course is to teach a systematic-analytical approach to rapid 12-lead interpretation. Topics begin with cardiac anatomy and physiology and progress to the level of recognizing the classic 12-lead and multi-lead ECG patterns. Open for Cross Enrollment on Space Available Basis.

**EMSP 3007. Human Diseases. 3 Credit Hours.**

This purpose of this course is to provide a foundation in basic disease conditions, pathophysiological process behind major diseases and their causes, definitions of disease, classifications of disease, and descriptions of diseases as they pertain to the emergency health sciences. Open for Cross Enrollment on Space Available Basis.

**EMSP 3010. Basic Cardiac Life Support. 0 Credit Hours.**

Course instruction satisfies AHA guidelines for Basic Cardiac Life Support (BCLS). Successful completion merits AHS BLS Course Completion Card. Topics include basic airway and ventilatory management of the choking and/or unconscious infant, child, and adult; cardiac chest compressions; and automated external defibrillation (AED). AHD Standard written and skills exams administered.

**EMSP 3011. EMS Informatics. 3 Credit Hours.**

This course is a class designed to initiate today's EMS professional to the rapidly advancing field of information science and to acquaint the students with the concepts of electronic field data collection, database theory and its application to EMS, information driven performance improvement, and clinical education.

**EMSP 3012. Behavioral Medicine and Psychopathology. 3 Credit Hours.**

This course provides an opportunity to develop an understanding of human behavior by providing an overview of behavioral disease processes and differentiation criteria to include disease presentation, physical examination findings, laboratory testing, and therapeutic approaches. The course will focus on issues pertinent to the pre-hospital environment including common patient presentation, overview of the legal system with mental health patients, and individual and system interventions.

**EMSP 3013. Professional Orientation and Legal Foundations. 3 Credit Hours.**

This course provides the student with an overview of the legal foundations for Emergency Medical Services. Topics include concepts of malpractice, litigation, consent and refusal of medical treatment, advanced directives, patient confidentiality, and expert and factual witness preparation.

**EMSP 3014. Interprofessional Health Care Teams. 3 Credit Hours.**

Healthcare is a volatile, uncertain, complex, and ambiguous system involving groups and teams of professionals. In an effort to improve general patient population health, the overall health care experience, and reduce the per capita cost of care, this class will explore relational leadership that promotes interdisciplinarity, interprofessionalism, and productive teamwork. During this course, learners will review theories and rich references while participating in activities and stimulating discussions to think differently about their roles and styles as leaders or members of a team.

**EMSP 3015. Multicultural Health. 3 Credit Hours.**

Cultural competence is essential to healthcare professionals. Medical professionals interact daily with diverse groups of people. This course will focus on differences in cultural beliefs about health, wellness, illness, and death, as well as cross-cultural health models and effective communications with the goal of developing and evaluating health promotion programs within the community. Learners will participate in online activities, case studies, and activities.

**EMSP 3031. Directed Study. 1-4 Credit Hours.**

This course is available to the learner to allow for a voluntary course of independent study in a clinical/advanced provider concentration.

**EMSP 3041. Current Research In Emergency Health Sciences. 3 Credit Hours.**

This course is a seminar designed to encourage the learner to discover research and research trends in the field of EMSP. Basic concepts in research methods will be discussed. The learner will have the opportunity to discover methods, procedures, and ways of analysis for examining research.

**EMSP 3100. Orientation to Online Learning. 1 Credit Hour.**

A course designed to provide the student with necessary information, tools, and strategies to enhance and facilitate learning at a distance at the Health Science Center.

**EMSP 4001. Physical Examination and History Taking. 3 Credit Hours.**

This course is designed to assist students in refining history taking, psychosocial assessment, and physical assessment skills. Emphasis is placed on detailed health history taking, differentiation, interpretation, and documentation of normal and abnormal findings. Learners are given the opportunity to study methods for understanding disease processes through proper techniques for eliciting a complete patient history and performing a thorough physical examination. Open for Cross Enrollment on Space Available Basis.

**EMSP 4003. Flight Medicine. 3 Credit Hours.**

This course is designed to provide the learner with general physics of flight as well as the effect that flight has on patients and equipment utilized in patient care. Additionally, general aviation guidelines and safety protocols will be introduced as well as the regulatory structure of flight medicine. Open for Cross Enrollment on Space Available Basis.

**EMSP 4005. EHS Systems Management and Budget. 3 Credit Hours.**

This course is designed to identify and discuss various forms and trends of EHS Systems management. From the volunteer service to the large, urban EHS system, the learner will have the opportunity to become familiar with the various aspects of America's EHS services. Budgeting and financial management skills and understanding necessary to manage emergency health systems will be emphasized.

**EMSP 4006. Educational Issues in Emergency Health Sciences. 3 Credit Hours.**

This course analyzes educational and training needs relating to EMS agencies. Principles of adult teaching and learning are presented.

**EMSP 4007. Human Resource Development. 3 Credit Hours.**

This course reviews the policies necessary to ensure that properly prepared and motivated personnel are available to carry out the mission and daily operations of an EMS organization and to gain a scholarly understanding of and familiarity with foundational HRD theory and research. Topics include methods of hiring staff, performance appraisal processes, legal requirements around health and safety, union matters, and sexual harassment in the workplace. Open for Cross Enrollment on Space Available Basis.

**EMSP 4008. Leadership Development. 3 Credit Hours.**

This course is a study and application of contemporary leadership theories and conceptual, skill-building, feedback, and personal growth approaches for the development of effective organizational leadership behaviors and practices. Open for Cross Enrollment on Space Available Basis.

**EMSP 4009. Pediatric Advanced Life Support (PALS). 1 Credit Hour.**

Instruction presented satisfies guidelines published by the American Heart Association's ECC for the PALS core curriculum. The focus is on the initial management of the cardiopulmonary arrest pediatric patient including advanced airway management techniques, cardiovascular pharmacology, defibrillation, and arrhythmia analysis. The student must review the current AHA PALS text prior to class. Successful completion results in PALS Provider Course Completion certification.

**EMSP 4010. Emer Med Serv-Ambulance. 4 Credit Hours.**

Orientation to the San Antonio Fire Department Standard Medical Operating Procedures (SMOPs) and EMS Organization is followed by assignment to SAFD Paramedic Ambulance teams. The student experiences emergency patient encounters involving on-the-scene pre-hospital management of medical, surgical, pediatric, psychological, obstetrical, and social emergencies. Experiences include vehicle extrication, full range of pre-hospital medical and trauma patients, EMS communication procedures, medical-legal situations, conflict resolution, EMS-Police cooperation, BLS/ACLS, hospital diversions experience and patient access to care problems peculiar to EMS. During 40 requisite patient encounters, the student makes brief assessment notes, assists in the care and transportation of patients to the 20 San Antonio Emergency rooms. The rotation also includes EMS Case Discussions, formal classes in comparative EMS organizations, methods of emergency triage, introduction to disaster medicine, management of mass casualties, and a survey of weapons of mass destruction. Prerequisite: Current BLS Certification and successful completion of third year of medical school is required.

**EMSP 4011. Contemporary Ethical Dilemmas. 3 Credit Hours.**

Contemporary Ethical Dilemmas in Health Professions with special emphasis on out-of-hospital and EMS medical care. This course provides the knowledge necessary to understand ethical behaviors and decision-making in health care and is an introduction to various ethical-legal issues.

**EMSP 4012. Pharmacology 2 for EMS Providers. 3 Credit Hours.**

This course is designed to provide a fundamental knowledge of the actions and therapeutic uses of drugs. Topics covered include: fluid and electrolyte balance, bone and joint disorders, nutrition, infectious diseases, and cardiovascular and parasitic diseases. Online course. Note: EMSP 3004 Pharmacology I is not a prerequisite for this course.



**EMSP 4013. Evidence-Based Practice Research in EHS. 3 Credit Hours.**

This course is designed to give students experience in qualitative research through development and investigation of a prehospital medical or systems practice study. This course allows students to expand research knowledge into application using the research process and methods of evidence-based practice. Prerequisites: EMSP 3041.

**EMSP 4023. Mobile Integrated Healthcare. 3 Credit Hours.**

This course is designed to introduce paramedics to the growing field of mobile integrated healthcare (MIH) community paramedicine (CP). Students will gain a comprehensive understanding of the American public health system, social determinants of health, MIH assessments, care planning, and chronic disease management. The course emphasizes how community paramedics can prevent acute exacerbations of chronic conditions by addressing the unique health challenges of individual patients and their communities. This course will specifically address the competencies, knowledge, and professional skills needed to function as a community paramedic. Students will also prepare to successfully complete the Certified Community Paramedic (CP-C) examination offered by the International Board of Specialty Certification.

**EMSP 4031. Independent Study 2-Clinical. 3 Credit Hours.**

This course is available to the learner to allow for a voluntary course of independent study in a clinical/advanced provider concentration.

**EMSP 4100. Advanced Cardiac Life Support. 1 Credit Hour.**

The focus of this course is the initial management of the cardiopulmonary-arrest patient including advanced airway management techniques, cardiovascular pharmacology, defibrillation, and arrhythmia analysis. The student must review the current AHA ACLS text prior to class. Successful completion results in an ACLS Provider Course Completion Card. Instruction presented satisfies guidelines published by the American Heart Association's ECC for their ACLS core curriculum.

**EMSP 5001. Basic Cardiac Life Support. 0 Credit Hours.**

Course instruction satisfies AHA guidelines for Basic Cardiac Life Support (BCLS). Successful completion merits AHA BLS Provider course completion card. Topics include basic airway and ventilatory management of the choking and/or unconscious infant, child, or adult victim; cardiac chest compression techniques; automated external defibrillation (AED). AHA standard written and skills exams administered.

**EMSP 5100. Advanced Cardiac Life Support. 0 Credit Hours.**

The focus of this course is the initial management of the cardiopulmonary-arrest patient including advanced airway management techniques, cardiovascular pharmacology, defibrillation, and arrhythmia analysis. The student must review the current AHA ACLS text prior to class. Successful completion results in an ACLS Provider Course Completion Card. Instruction presented satisfies guidelines published by the American Heart Association's ECC for their ACLS core curriculum.

**EMSP 6135. Advanced Cardiac Life Support. 1 Credit Hour.**

Theory and skills necessary for the management of cardiovascular emergencies as specified by the American Heart Association (AHA) guidelines. This course was designed to be repeated multiple times to improve student proficiency and available for Master's level of higher programs.

**EMSP 7001. Basic Cardiac Life Support. 0 Credit Hours.**

Course instruction satisfies AHA guidelines for Basic Cardiac Life Support. Successful completion merits AHA BLS Healthcare Provider course completion certification. Topics include basic airway and ventilatory management of the choking and/or unconscious infant, child or adult victim, cardiac chest compression techniques, and automated external defibrillation (AED). AHA standard written and skills exams administered.