

Approved Courses UMBC - Critical Care

Name	Course Length in Minutes	Description
Acute Coronary Syndrome (ACS) (ALS)	60	Heart disease has been the leading cause of death in the world for over a century – and the numbers are climbing. When you respond to a call for chest pain or even shortness of breath, you should have a high index of suspicion that you may be dealing with an acute coronary syndrome (ACS). Throughout this course, we'll discuss how to catch these events early and what to do to ensure the patient has the best possible outcome.
Advanced Airway Management	60	Patients that can't breathe require immediate and precise intervention. When the call comes, you need to be ready. Assessment and management of the airway is a vital component in the pre-hospital provider's repertoire. This course will examine key aspects of airway assessment and management to ensure the advanced provider is well-prepared to respond to respiratory emergencies in the field.
Advanced Airway Management in Cardiac Arrest	60	Many studies have been done comparing the results of different methods to use when responding to patients suffering from cardiac arrest and the best techniques to use for the highest rate of survival. Throughout this course, some of those studies will be compared to show the results and which techniques were found to be most successful in patient survival.
Allergic Reactions and Anaphylaxis (ALS)	60	Allergic reactions, including their more severe form, anaphylaxis, represent an exaggerated or hypersensitive response following exposure to any of a number of triggers or allergens, like food, medications, or pollen. Allergic and anaphylactic reactions are typically but not always mediated by the immune system and are most notable for the fact that many other people would not experience any such reaction when exposed to the same triggers. Anaphylaxis represents the more severe and potentially life-threatening form of an allergic reaction. Your ability to recognize and treat allergic reactions can mean the difference between life and death for some patients. In this course, we'll discuss how the immune system may trigger allergic reactions, anaphylaxis recognition and treatment, as well as epinephrine administration.

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Asthma and Shortness of Breath (ALS)	60	About 1 in 12 people in the United States have asthma, contributing to frequent calls to dispatch EMS for shortness of breath. In this course, we will learn about the best response strategies for handling shortness of breath and asthma emergency calls. We'll review how to assess patients and distinguish between asthmatic patients and other respiratory issues. We'll review the pathophysiology of asthma. We'll also go into more detail about management options for asthma, as there are several different treatment options depending on the severity of the patient's condition.
Blood Products for Managing Hemorrhage and Shock Patients	30	Hemorrhage and the patient's ability to clot can drastically affect patient outcomes. As an ALS provider, you must be able to quickly recognize the signs and risks of hemorrhage and shock to provide proper treatment. This training collection will examine the common types of shock, and how blood products and medication can be used to manage patients who are hemorrhaging. In this training collection, Christopher McLaughlin will also discuss effects of disease and medication on the body's ability to clot effectively.
Burn Care for Patients and Firefighters	60	EMS departments frequently align with fire departments, creating a greater need for burn care training and considerations as a common dispatched emergency. The prepared responder will be able to manage treatment for pediatric burn victims, firefighters, and the general population – each with their own accompanying components that make up comprehensive pre-hospital management.
Cardiac Emergencies in the Pre-Hospital Setting	60	This course will discuss treating cardiac emergencies in the pre-hospital environment. Topics discussed include predicting patient flow, the cardiovascular system, pit crew CPR, cardiac arrest strategies, cardiac arrest drugs, dysrhythmia, ACLS, what to do if the rhythm is too slow or too fast, and other cardio vascular diseases.
Common Cardiovascular Conditions (ALS)	60	Imagine you're on scene with a patient whose heart is racing at 200 beats per minute — or another whose heart rate has plummeted to 40 beats per minute, leaving them pale and only semi-conscious. Cardiovascular emergencies are rarely straightforward; a simple "stomach ache" in a diabetic patient could actually be a silent, life-threatening STEMI. Would you know when to reach for the defibrillation pads, when to use a modified vagal maneuver, or how to assess a patient when you can't find a pulse because of a mechanical pump? In this course, we'll cover all these topics and more.

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Confirming Tube Placement	60	Confirming tube placement can be difficult if you don't know what signs to look for. Using a capnography machine is one way to confirm tube placement and ensure you provide the right patient care. In this course, we will review the makeup of the lungs, how gases are exchanged, and the importance of monitoring waveforms to confirm the tube remains in the right position and the patient is not under or over-ventilated.
Crash Course in Toxicology: Five Deadly Overdoses to Know	60	Overdoses are not an unusual reason for EMS calls. While the vast majority will do well with supportive care, there are certain overdoses with the potential for sudden deterioration and death if they are not managed aggressively. We will discuss five overdoses that every EMS provider should know and arm them with the knowledge to save these patients if they encounter them.
Cricothyrotomy: Surgical Airway Realities	60	The pathway to mitigation of a true "can't intubate, can't oxygenate" situation is very direct—a cricothyrotomy. Many paramedics will never perform this procedure in their career; are YOU ready? The low-frequency, high-risk nature of this procedure mandates absolute knowledge of the anterior neck anatomy, frequent practice, and procedural confidence. When cricothyrotomy fails, it is often the result of an inability to properly locate the anatomic structures of the larynx. This course explores the realities of cricothyrotomy in a unique manner, using high-resolution cadaveric images, the anterior neck will be procedurally dissected and critical anatomic structures will be identified. A step-by-step approach—based on the latest evidence and best practices—will be followed to maximize your success in performing this time-sensitive, final option procedure.
Crush Injuries (ALS)	60	When it comes to crush injuries, the more serious injuries are sometimes the ones that are not visible. What is happening inside the body can have more of a life-threatening effect on the patient than the crush injury itself. As EMS clinicians, it is imperative to be aware of all aspects of crush injuries incurred by adults and pediatric patients, to see how these incidents affect them inside and out.
Defibrillator and Monitor Functions	30	Irregular heartbeats or arrhythmias are dangerous, life-threatening events. There are different methods to help revive a patient depending on the heart event they are experiencing. EMS providers will need to be able to observe the patient's heart rhythm and use monitors to do so. EMS systems utilize combination monitor/defibrillators in the field to both track the patient's cardiac output and provide defibrillation if needed. This course will review common monitor functions and demonstrate how to perform transcutaneous pacing, synchronized cardioversion, and placing a 12-lead.

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E-CPR, VADs, and ECMO: Oh My!	60	In this webinar, learners will be introduced to extracorporeal membrane oxygenation (ECMO) and its broad applications. It is a well-established therapy, and its use is becoming more widespread. Most tertiary facilities have ECMO programs and capability. EMS personnel could be called on to transport these critically ill patients, and this lecture provides a broad overview. ECMO has been used in the field as a resuscitative adjunct. In the future, it is possible that some centers in the United States may consider this option. In this course, Dr. Misselbeck also provides a provocative look at the potential of this emerging technology for the future.
EKG and ECMO in EMS	30	This course is a collection of microlearning courses that focus on how EKGs and ECMO may be used in the field. Industry leaders from FDIC and JEMS conference talk about how ECMO if used properly can affect patient outcomes, the future of ECMO, accurate EKG interpretation and much more.
Endocrine Emergencies (ALS)	90	The endocrine system plays a key role in managing fluid balance, hormones, electrolytes, and chemicals to maintain homeostasis in the body. Parts of this system may fail for various reasons, warranting EMS intervention. In this course, we'll review the endocrine system and its structures. Then, we'll examine the causes, symptoms, and treatment for diabetic emergencies like diabetic ketoacidosis, thyroid disorders, including thyroid storm and myxedema, adrenal gland disorders (like Cushing's disease and Addison's disease), and finally parathyroid gland emergencies, including hypercalcemia and hypocalcemia.
Facial Trauma (ALS)	60	The human face is often the first thing you recognize when meeting someone. When there is a disfiguring injury, it is difficult to see. As first responders, we must overcome that difficulty and put aside the shock and start to assess your patient. In this course, we'll discuss facial anatomy and physiology, how to anticipate injuries by recognizing the mechanism of injury, and hidden associated injuries and hidden bleeding. You'll get practice in setting priorities in patient care when facial injury is involved and anticipating changes in your patient's condition during treatment and transport will make a difference in your patient's outcome.

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Geriatric Falls (ALS)	60	According to research published by the National Institutes of Health, 17% of all emergency calls may be for patients over 65 who have experienced a fall. Of those, almost 80% will not be able to get up independently, and 30% will have been stranded on the floor for over an hour. Given the high likelihood of being called out for geriatric falls, EMS professionals need to understand the highest risk factors and complications associated with these calls. High rates of patient refusals in the geriatric population (over 21% of dispatches to geriatric falls) make it harder to ensure quality care. Make sure your assessment is comprehensive and thorough, considering all the potential outcomes, before you walk away.
Hemorrhage Control	60	Death due to uncontrolled bleeding is often preventable. In EMS, we have tools and resources to help mitigate or alleviate the effects of hemorrhage. Be a part of the difference of life and death, by learning effective hemorrhage control. In this course, we'll discuss internal and external bleeding and the treatment options for both, as well as considerations and treatments for EMS providers responding to hemorrhagic patients.
Identifying Sepsis in the Prehospital Setting	60	Ensuring patients with septic shock receive quick and proper care is vital to having a positive outcome. Septic is a common call in EMS and knowing the proper symptoms and screening tools can mean life or death for many patients. In this course, Dr. Christopher Hunter defines sepsis, identifying screening tools, and the different protocols when encountering a person with suspected sepsis.
Invasive and NPPV in the Prehospital Setting	60	In the pre-hospital setting, providers need all tools at their disposal to ensure patient care. One of these tools that can be of great benefit is a mechanical ventilator. We will review the benefits of a mechanical ventilator versus manual resuscitative devices, how to choose the right machine for your department, and how to prevent lung injury, morbidity, and mortality typically caused by bag valve mask ventilation.
It's Not Always Sepsis	60	Sepsis is brought on by an infection that should be treated right away when identified. However, it can be very difficult to identify sepsis in both the pre-hospital and hospital settings. In this course, we will review how to identify sepsis in the pre-hospital setting, treat it once you determine it is sepsis, and hand off a patient to the hospital for continued care.

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LVO Stroke Recognition	60	Prehospital stroke care continues to evolve. Over the past five years, mechanical thrombectomy has emerged as the preferred treatment option for patients presenting with large vessel occlusion strokes. EMS agencies are now being challenged to recognize large vessel occlusions on-scene and consider direct transport to comprehensive stroke centers for mechanical thrombectomy. In this course, we will review the current paradigm of prehospital stroke care, review the growing body of literature evaluating prehospital stroke severity tools, and discuss the numerous items affecting transport decisions.
Management of Acute Burn Injuries	60	This course will examine current trends in burn care for both pediatric and adult patients. We will discuss triage and stabilization, airway and inhalation injury, burn shock and edema, escharotomy, calculating burn size, types of burns, and clinical studies.
Management of Congestive Heart Failure (CHF) (ALS)	60	A patient suffering from CHF may exhibit signs similar to those of other conditions, so it is essential to gain a thorough understanding of their symptoms to help determine the appropriate treatment route. Gathering this information may be difficult because you want to try to keep the patient calm and prevent them from speaking too much. It is not uncommon for the patient to be panicked as they feel like they can't breathe. Remain calm yourself, and chances are they will begin to relax as well. Ask specific, direct questions to keep them from talking too much, and determine your treatment method based on the symptoms they are explaining and exhibiting.
Managing Patients with Atrial Fibrillation (A-fib) (ALS)	60	Atrial fibrillation is the most common cardiac dysrhythmia encountered by both EMS personnel. However, many providers lack an understanding of the condition and appropriate management. In this course, providers will gain a better understanding of the etiology and pathophysiology of atrial fibrillation, as well as the acute and long-term risks that patients with atrial fibrillation face. Participants will understand the treatment of both hemodynamically stable and unstable patients presenting with atrial fibrillation.
Measuring Cerebral Perfusion During CPR	60	When we think of Cardiac Arrests we think about an older population with comorbidities. However, there is evidence these types of incidents can happen to anyone. This course highlights what skills you can use to improve survival rates as an EMT and Paramedic.

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Medic Math	30	Medic math can be used to determine the proper dose of medicine necessary for a patient. The formula taught in this course accounts for volume, dosage, desired doses, time, and drip ratings. Here, you will be shown different examples to learn how to decipher different medication administration techniques with weight and non-weight-based dosing and over various periods of time.
Moving Past FAST Exam: Prehospital Ultrasound	60	Ultrasound machines have been used in hospitals for years to allow medical providers to gain a better look inside their patients to find the source of issues, but why aren't they used more regularly in the field? In this course, we discuss how ultrasound actually works, what can be detected using an ultrasound, and how this can make a big impact on saving more lives.
Optimization for Successful Intubation	45	As ALS providers, we can feel the pressure to intervene rapidly when indicated for patients. However, we have a responsibility as providers to ensure we are providing the appropriate level of care and doing it correctly. In this training collection, Jeremy Williams discusses best practices for preparing for intubation, induction agents, Rapid sequence intubation (RSI), drug-assisted airway management (DAAM), and delayed sequence intubation (DSI).
Pediatric Assessment (ALS)	60	When assessing a pediatric patient, some techniques may have to be adapted from those used on adult patients. Pediatrics come with different ranges of vitals, their developmental milestones will need to be considered when assessing, and their ability to respond to questions may hinder your understanding of events that lead to the current situation. It is important to have a caregiver or parent present to assist in giving you the important details to ensure your assessment is accurate.
Pediatric Cardiac And Respiratory Arrest (ALS)	60	Many EMS clinicians may not regularly encounter pediatric patients, but it is necessary to be prepared to respond to any type of patient. This course will discuss pediatric respiratory arrest and cardiac arrest, including causes, prognosis, prevention, treatment, and transportation. This course will also examine poisoning and special considerations for traumatic cardiac arrest in pediatric patients.

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Pediatric Toxic Ingestion (ALS)	120	Poisoning or toxicological emergencies remain a significant but preventable cause of pediatric injury. With the increased availability of prescription medications along with a multitude of over-the-counter (OTC) medications, pediatric toxic exposures are more frequent than in any other population age group. Although many of the principles and concepts that apply in adult toxicology share similarities to pediatrics, pediatric toxicological emergencies are often extensive and multifaceted. This course introduces the concepts of pediatric toxicological emergencies, beginning with the basic approach to the poisoned pediatric patient, followed by specific potentially toxic natural or synthetic substances and their associated toxidromes, as well as patient treatment and management.
Pediatric Trauma (ALS)	60	EMS calls for children account for 6-10% of all EMS runs nationwide, with trauma being the most common. Regardless of licensure level, experience, or familiarity with kids, it's difficult to be comfortable treating an injured child. We know in medical scenarios that children are not just small adults, and the same rings true in trauma. This course will focus on recognition of injuries based on size, weight, and mechanism as well as management techniques for those injuries.
Pharmacology and Toxicology in EMS	30	As an EMS professional one area that is often not discussed but is an important part of your role is pharmacology and toxicology. We will explore in this collection of microlearning's current trends, exposure to fentanyl and other toxic substances, medication errors, and auto injectors.
Pre-Hospital Fluid Resuscitation	60	Ensuring patients receive pre-hospital fluids can mean reduced mortality rates and better patient care. One of the main incidents first responders may respond to that would require administering fluids would be someone experiencing shock. This course explains the different kinds of shock, how to treat shock, and fluid resuscitation response.
Prehospital Obstetric Emergencies (ALS)	60	Obstetric and neonatal emergencies place EMS clinicians at the intersection of two patients, rapid physiologic change, and limited time to intervene. These calls require medical skill, calm communication, and a strong understanding of how pregnancy alters normal assessment. This course prepares learners to recognize early warning signs, manage field delivery, and navigate the highest risk maternal and newborn complications encountered in prehospital care.

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Tackling the Impossible Airway	60	There are “difficult airways” and there are seemingly “impossible airways.” This case-based class will use vivid examples (trauma, angioedema, etc.) of seemingly impossible airways and discuss strategies to overcome the profound challenges these situations pose to the prehospital provider.
The Art of Reading Tachycardia Volume 1 (ALS)	60	Your friend sneaks out from behind a door and scares you. You feel your heart rate quicken a little. Not a problem. A slightly faster heart rate, between 100 and 150 beats per minute, can’t hurt anyone, right? In this course, we’ll uncover common causes of sinus tachycardia, and not all of them are benign. Sinus tachycardia is a compensatory response with several physiological causes. Your job is to catch the problem quickly, while your intervention can still make a difference.
The Art of Reading Tachycardia Volume 2 (ALS)	60	What do you do with a patient who has a very fast heart rate and you can’t identify an underlying condition? What if the heart rate itself is the problem? Learn to make time-critical decisions and prioritize your most effective interventions first. We will demystify tachycardia in this course as we explore AVRT, AVNRT, atrial fibrillation, atrial flutter, ventricular tachycardia, and torsades de pointes, with considerations for Wolff-Parkinson White syndrome.
The Ketamine Challenge: Pros and Cons for EMS	60	EMS use of ketamine is relatively new. Evidence suggests it is both safe and effective for Excited Delirium Syndrome, procedural sedation, and analgesia. This potent, general anesthetic agent also creates unique challenges heretofore unknown in EMS. This course will review the background of EMS ketamine, use in multiple clinical settings, the ketamine dosing spectrum, special considerations (e.g., lookalike packaging and the need for dilution), and the recognition and management of potential complications.
Traumatic Brain Injury Considerations (ALS)	60	This course will cover the foundational and advanced information for recognizing, assessing, and managing traumatic brain injuries (TBIs). We will identify the types of TBIs and injuries associated with them, and recognize common symptoms and appropriate treatments.