

Medical Emergencies (EMSP 2434)



**LAMAR INSTITUTE
OF TECHNOLOGY**

INSTRUCTOR CONTACT INFORMATION

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Office Hours:	Upon Request

CREDIT

4 Semester Credit Hours (4 hours lecture, 0 hours lab)

MODE OF INSTRUCTION

Face to Face, Online or Hybrid

PREREQUISITES:

EMT-Basic or Advanced
BIOL 2404 – Anatomy and Physiology
EMSP 1338 – Intro to Advanced Practice
EMSP 1356 – Patient Assessment, Airway
EMSP 2237 – Emergency Procedures II
EMSP 2206 – Emergency Pharmacology
EMSP 1455 – Trauma Management
EMSP 2262 – Clinical – Emergency Medical Technician-Paramedic
EMSP 2444 – Cardiology

CO-REQUISITES:

EMSP 2205 – EMS Operations
EMSP 2243 – Assessment-Based Management
EMSP 2330 – Special Populations
EMSP 2368 – Practicum Field Experience

COURSE DESCRIPTION

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.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to:

Approved: **Initials/date**

- Integrate assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint.
- Complex depth, comprehensive breadth of pathophysiology, assessment, and management of medical complaints to include;
 - Transport mode
 - Destination decisions
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of neurological disorders to include;
 - Stroke/intracranial hemorrhage/transient ischemic attack
 - Seizure
 - Status epilepticus
 - Headache
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of neurological disorders to include;
 - Dementia
 - Neoplasms
 - Demyelinating disorders
 - Parkinson's disease
 - Cranial nerve disorders
 - Movement disorders
 - Neurologic inflammation/infection
 - Spinal cord compression
 - Hydrocephalus
 - Wernicke's encephalopathy
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of abdominal and gastrointestinal disorders to include;
 - Acute and chronic gastrointestinal hemorrhage
 - Liver disorders
 - Peritonitis
 - Ulcerative disease
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of abdominal and gastrointestinal disorders to include:
 - Irritable bowel syndrome
 - Inflammatory disorders
 - Pancreatitis
 - Bowel obstructions
 - Hernias
 - Infectious disorders

- Gall bladder and biliary tract disorders
- Simple depth, simple breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of abdominal and gastrointestinal disorders to include;
 - Rectal abscess
 - Rectal foreign body obstructions
 - Mesenteric ischemia
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of immunology to include;
 - Hypersensitivity
 - Allergic and anaphylactic reactions
 - Anaphylactic reaction
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of immunology to include;
 - Collagen vascular disease
 - Transplant related problems
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of infectious diseases to include;
 - HIV-related diseases
 - Hepatitis
 - Pneumonia
 - Meningococcal meningitis
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of infectious diseases to include;
 - Tuberculosis
 - Tetanus
 - Viral diseases
 - Sexually transmitted diseases
 - Gastroenteritis
 - Fungal infections
 - Rabies
 - Scabies and lice
 - Lyme disease
 - Rocky Mountain Spotted Fever
 - Antibiotic resistant infections
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of endocrine disorders to include;
 - Acute diabetic emergencies

- Diabetes
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of endocrine disorders to include;
 - Adrenal disease
 - Pituitary and thyroid disorders
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of psychiatric disorders to include;
 - Acute psychosis
 - Agitated delirium
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of psychiatric disorders to include;
 - Cognitive disorders
 - Thought disorders
 - Mood disorders
 - Neurotic disorders
 - Substance-related disorders/addictive behavior
 - Somatoform disorders
 - Factitious disorders
 - Personality disorders
 - Patterns of violence/abuse/neglect
 - Organic psychoses
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of cardiovascular diseases to include;
 - Acute coronary syndromes
 - Angina pectoris
 - Myocardial infarction
 - Heart failure
 - Non-traumatic cardiac tamponade
 - Hypertensive emergencies
 - Cardiogenic shock
 - Vascular disorders
 - Abdominal aortic aneurysm
 - Arterial occlusions
 - Venous thrombosis
 - Aortic aneurysm/dissection
 - Thromboembolism
 - Cardiac rhythm disturbances
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of cardiovascular disease to include;

- Infectious diseases of the heart
 - Endocarditis
 - Pericarditis
 - Congenital abnormalities
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of toxicology to include;
 - Cholinergic
 - Anticholinergics
 - Sympathomimetic
 - Sedative/hypnotics
 - Opiates
 - Alcohol intoxication and withdrawal
 - Over-the counter and prescription medications
 - Carbon monoxide
 - Illegal drugs
 - Herbal preparations
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of respiratory disorders to include;
 - Acute upper airway infections
 - Spontaneous pneumothorax
 - Obstructive/restrictive lung diseases
 - Pulmonary infections
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of respiratory disorders to include;
 - Neoplasms
 - Pertussis
 - Cystic fibrosis
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of hematology disorders to include;
 - Sickle cell disease
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of hematology disorders to include;
 - Blood transfusion complications
 - Hemostatic disorders
 - Lymphomas
 - Red blood cell disorders
 - White blood cell disorders
 - Coagulopathies

- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of genitourinary/renal disorders to include;
 - Complications of
 - Acute renal failure
 - Chronic renal failure
 - Dialysis
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of genitourinary/renal disorders to include;
 - Acid base disturbances
 - Fluid and electrolytes
 - Infection
 - Male genital tract conditions
- Complex depth, comprehensive breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of gynecology disorders to include;
 - Vaginal bleeding
 - Sexual assault
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of gynecology disorders to include;
 - Infections
 - Pelvic inflammatory disease
 - Ovarian cysts
 - Dysfunctional uterine bleeding
 - Vaginal foreign body
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of non-traumatic musculoskeletal disorders to include;
 - Disorders of the spine
 - Joint abnormalities
 - Muscle abnormalities
 - Overuse syndrome
- Fundamental depth, foundational breadth of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of diseases of the eyes, ears, nose, and throat to include;
 - Common or major diseases of the eyes, ears, nose and throat including nose bleed.

REQUIRED TEXTBOOK AND MATERIALS

Nancy Caroline's Emergency Care in the Streets 9th; ISBN: 9781284274004
Platinum Planner
EMS Testing

ATTENDANCE POLICY

Three absences are allowed. If a student is tardy to class or departs early two (2) times, it will be equal to one (1) absence. Each absence beyond three absences will result in a 5-point deduction from your final grade.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
Week 1	ACLS		8/26
Week 1	PALS		8/28
Week 2	Respiratory Emergencies		9/2 Lec 9/4 Quiz WkBk
Week 3	Neurologic Emergencies		9/9Lec 9/11 Quiz WkBk
Week 4	Diseases of Eyes, Ears, Nose & Throat; Non-traumatic Musculoskeletal Disorders		9/16 Lec 9/18 Quiz WkBk
Week 5	Abdominal & Gastrointestinal Emergencies		9/23 Lec 9/25 Quiz WkBk
Week 6	Renal Emergencies		9/30 Lec 10/2 Quiz WkBk
Week 7	Gynecologic Emergencies		10/7 Lec 10/9 Quiz WkBk
Week 8	Mid Term		10/14 Review 10/16 exam
Week 9	Endocrine Emergencies		10/21 Lec 10/23 Quiz
Week 10	Hematologic Emergencies		10/28 Lec 10/30 Quiz
Week 11	Immunologic Emergencies		11/04 Lec 11/06 Quiz
Week 12	Infectious Diseases		11/11 Lec 11/13 Quiz
Week 13	Toxicology		11/18 Lec 11/20 Quiz
Week 14	Psychiatric Emergencies		11/25 Lec 11/25 Quiz
Week 15	FINAL		12/2 review 12/4 final
Week 16	Comprehensive		12/9 12/10

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

Affective Evaluation	10%
Chapter Quiz	30%
Mid-Term Exam	30%
Final Exam	30%

GRADE SCALE

90 – 100	A
84 – 89	B
75 – 83	C
70 – 74	D
0 – 69	F

TECHNICAL REQUIREMENTS

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

STUDENT CODE OF CONDUCT STATEMENT

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

ARTIFICIAL INTELLIGENCE STATEMENT

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI/ChatGPT in their courses.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these

emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

ADDITIONAL COURSE POLICIES/INFORMATION

1. Computers, telephones, headphones, and any other electronic devices must be turned off while in class or used only with permission of the instructor.
2. Do not bring children to class.
3. Late assignments will be accepted on a case by case basis.
4. Tests. Students that miss a test are not allowed to make up the test. Students that miss a test will receive a grade of '0'.
5. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.
6. Additional class policies as defined by the EMS Program Student Handbook.

Course Outline

A. Welcome to LIT EMS Program

1. Introduction of EMS Staff, Instructors and students
2. EMS program policies

B. Pediatric Advanced Life Support (PALS)

1. Introduction to PALS
 - PALS course Overview
 - Overview of PALS science
2. Start initial competency practice and testing
 - CPR/AED practice and competency testing
 - Rhythm Disturbances/Electrical Therapy Skills
3. Core Case Simulations (Cardiac)
 - Cardiac Cases 1 and 2
4. Overview of Pediatric Assessment
 - Overview of Core Case Discussions and Simulations
5. Core Case Simulations (Cardiac continued)
 - Cardiac cases 3 and 4
6. Core Case Simulations (Respiratory)
 - Core Case Simulations Respiratory Cases 1 and 2
7. Core Case Simulations (Respiratory Continued)
 - Core Case Simulations Respiratory Cases 3 and 4
8. Core Case Simulations (Shock)
 - Core Case Simulations Shock Cases 1 and 2
9. Core Case Simulations (Shock continued)
 - Core Case Simulations Shock Cases 3 and 4
10. Putting it all together
 - Course summary and testing details
11. PALS Written Test
 - Remediation (for those that score less than 84%).

C. Respiratory Emergencies

1. Anatomy and Physiology Review
2. Patient Assessment
3. Emergency Medical Care
4. Pathophysiology, Assessment, and Management of Obstructive Upper Airway Diseases
5. Pathophysiology, Assessment, and Management of Obstructive Lower Airway Diseases
6. Pathophysiology, Assessment, and Management of Common Respiratory Conditions
7. Pathophysiology, Assessment, and Management of Conditions Outside the Lung Parenchyma

D. Neurological Emergencies

1. Anatomy and Physiology Review
2. Patient Assessment
3. Standard Care Guidelines for the Neurologic Patient
4. Pathophysiology, Assessment, and Management of Common Neurologic Emergencies
5. Pathophysiology, Assessment, and Management of Demyelinating, Degenerating, and Motor Neuron Disorders

E. Diseases of the Eyes, Ears, Nose, and Throat

1. The Eye
2. The Ear
3. The Nose
4. The Throat

F. Abdominal and Gastrointestinal Emergencies

1. Anatomy and Physiology Review
2. Patient Assessment
3. Emergency Medical Care
4. Pathophysiology, Assessment, and Management of Specific Abdominal and Gastrointestinal Emergencies
5. Pathophysiology, Assessment, and Management of Gastrointestinal Bleeding
6. Pathophysiology, Assessment, and Management of Esophageal Pathologies
7. Pathophysiology, Assessment, and Management of Acute Inflammatory Conditions
8. Pathophysiology, Assessment, and Management of Chronic Inflammatory Conditions
9. Pathophysiology, Assessment, and Management of Acute Infectious Conditions
10. Pathophysiology, Assessment, and Management of Obstructive Conditions
11. Pathophysiology, Assessment, and Management of Ischemic and Neoplastic Disorders

G. Genitourinary and Renal Emergencies

1. Anatomy and Physiology Review
2. Patient Assessment
3. Emergency Medical Care
4. Pathophysiology, Assessment, and Management of Specific Emergencies

H. Gynecologic Emergencies

1. Anatomy and Physiology Review
2. Patient Assessment
3. Emergency Medical Care
4. Pathophysiology, Assessment, and Management of Gynecologic Trauma
5. Pathophysiology, Assessment, and Management of Specific Emergencies

- I. Endocrine Emergencies
 - 1. Anatomy and Physiology Review
 - 2. Patient Assessment
 - 3. Emergency Medical Care
 - 4. Pathophysiology, Assessment, and Management of Glucose Metabolic Derangements
 - 5. Pathophysiology, Assessment, and Management of Other Disorders of the Pancreas
 - 6. Pathophysiology, Assessment, and Management of Adrenal Insufficiency
 - 7. Pathophysiology, Assessment, and Management of Other Adrenal Emergencies
 - 8. Pathophysiology, Assessment, and Management of Thyroid, Parathyroid, and Pituitary Gland Disorders

- J. Hematologic Emergencies
 - 1. Anatomy and Physiology Review
 - 2. Patient Assessment
 - 3. Emergency Medical Care
 - 4. Pathophysiology, Assessment, and Management of Specific Emergencies

- K. Immunologic Emergencies
 - 1. Anatomy and Physiology Review
 - 2. Patient Assessment
 - 3. Emergency Medical Care
 - 4. Pathophysiology, Assessment, and Management of Specific Emergencies
 - 5. Patient Education

- L. Infectious Disease
 - 1. Protecting the Public Health
 - 2. Protecting Health Care Providers
 - 3. Patient Assessment
 - 4. General Management Principles
 - 5. Chain of Infection
 - 6. Infection and Sepsis
 - 7. Pathophysiology, Assessment, and Management of Droplet-Transmitted Diseases
 - 8. Pathophysiology, Assessment, and Management of Airborne-Transmitted Disease
 - 9. Other Infections of the Respiratory Tract
 - 10. Pathophysiology, Assessment, and Management of Sexually Transmitted Diseases
 - 11. Fungal Skin Infections
 - 12. Helminths
 - 13. Parasitic Insects
 - 14. Pathophysiology, Assessment, and Management of Common Bloodborne Diseases
 - 15. Ebola
 - 16. Pathophysiology, Assessment, and Management of Enteric Diseases
 - 17. Pathophysiology, Assessment, and Management of Non-Bloodborne Hepatitis Viruses

18. Pathophysiology, Assessment, and Management of Vector-borne and Zoonotic Diseases
19. Pathophysiology, Assessment, and Management of Infection with Antibiotic-Resistant Organisms
20. Pathophysiology, Assessment, and Management of Newly Recognized Diseases

M. Toxicology

1. Types of Toxicologic Emergencies
2. Poison Centers
3. Pathophysiology
4. Patient Assessment
5. Emergency Medical Care
6. Pathophysiology, Assessment, and Management of Abuse of and Overdose with Specific Substances

N. Psychiatric Emergencies

1. Definition of Behavioral Emergency
2. Prevalence
3. Medicolegal Considerations
4. Pathophysiology
5. Patient Assessment
6. Emergency Medical Care
7. Pathophysiology, Assessment, and Management of Specific Emergencies
8. Medications for Psychiatric Disorders
9. The Psychological Effect of War: Returning Combat Veterans