

## **Cardiology (EMSP 2444)**

### **CREDIT**

4 Semester Credit Hours (3 hours lecture, 3 hours lab)

### **MODE OF INSTRUCTION**

Face to Face, Online or Hybrid

### **PREREQUISITE/CO-REQUISITE:**

#### **EMT- Basic or Advanced**

- EMSP 1338
- EMSP 2205
- EMSP 2264

### **COURSE DESCRIPTION**

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

### **COURSE OBJECTIVES**

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

- 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 cardiovascular complaint.
- Integrate comprehensive knowledge of causes and pathophysiology into management of cardiac arrest and peri-arrest states.
- Integrate a comprehensive knowledge of the causes and pathophysiology into management of shock, respiratory failure or arrest with emphasis on early intervention to prevent arrest.
- Demonstrate knowledge of the main structures and functions of the cardiovascular system's anatomy and physiology.
- Summarize the general assessment of a patient with a cardiovascular emergency.
- Explain the phases that comprise the cardiac action potential.
- Identify the structure and course of all divisions and subdivisions of the cardiac conduction system.
- Identify the components of an ECG rhythm strip.
- Outline a systematic approach to the analysis and interpretation of cardiac dysrhythmias.
- Explain normal sinus rhythm and the ECG characteristics, possible causes, signs and symptoms, and initial emergency care of dysrhythmias.
- Explain the emergency medical care for the symptomatic adult patient with bradycardia.
- Explain the ECG characteristics, possible causes, signs and symptoms, and initial emergency medical care for dysrhythmias originating in the atria.
- Explain the ECG characteristics, possible causes, signs and symptoms, and initial emergency medical care for dysrhythmias originating in the atrioventricular (AV) junction.
- Explain the ECG characteristics, possible causes, signs and symptoms, and initial emergency medical care for dysrhythmias originating in the ventricles.
- Evaluate the dysrhythmias seen in cardiac arrest.

Approved: Initials/date



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- Explain the emergency medical care of the adult patient with cardiac arrest.
- Describe the components of the post-cardiac arrest care.
- Explain the ECG characteristics, possible causes, signs and symptoms, and initial emergency medical care for AV blocks.
- Give examples of indications for using a 12-lead ECG.
- Indicate the placement of 12-lead ECG electrodes.

#### **INSTRUCTOR CONTACT INFORMATION**

Instructor: Misti Dearing

Email: [mrdearing@lit.edu](mailto:mrdearing@lit.edu)

Office Phone: 409-247-5090

Office Location: MPC 245

Office Hours: Upon Request

#### **REQUIRED TEXTBOOK AND MATERIALS**

EMS Program Student Handbook

Nancy Caroline's Emergency Care in the Streets 9th

ISBN: 9781284274004

Platinum Planner

EMS Testing ECG Interpretation made Incredibly Easy, Lippincott, Williams, And Wilkins 5<sup>th</sup>

- ISBN 13-9781608312894

#### **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)
6/1/2023	Electrophysiology		
6/6/2023	Electrophysiology	Objectives 1-10	ECG Packet
6/8/2023	Electrophysiology		ECG Packet
6/13/2023	Electrophysiology	Objectives 11-20	ECG Packet
6/15/2023	Electrophysiology		ECG Packet
6/20/2023	Electrophysiology	Objectives 21-30	ECG Packet
6/22/2023	Electrophysiology		ECG Packet
6/27/2023	Electrophysiology	Objectives 31-39	ECG Packet
6/29/2023	Mid Term		
7/6/2023	12 Lead		
7/11/2023	12 Lead		ECG Packet
7/13/2023	12 Lead		ECG Packet
7/18/2023	12 Lead		ECG Packet
7/20/2023	Cardiac Pathophysiology		ECG Packet
7/25/2023	Cardiac Pathophysiology		ECG Packet
7/27/2023	Cardiac Pathophysiology		ECG Packet
8/1/2023	Cardiac Assessment and Management		ECG Packet
8/3/2023	Cardiac Assessment and Management		ECG Packet
8/8/2023	Cardiac Assessment and Management		ECG Packet
8/10/2023	Final		

**COURSE EVALUATION**

Final grades will be calculated according to the following criteria:

Affective Evaluation	20%
Chapter Quiz	30%
Mid-Term Exam	25%
Final Exam	25%

**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](mailto: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](http://www.lit.edu). Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

## **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. Cardiovascular Emergencies
  1. Anatomy and Physiology
  2. Patient Assessment
  3. Electrophysiology
- C. ECG Fundamentals
  1. Obtaining a rhythm strip
  2. Interpreting a rhythm strip
- D. Recognizing arrhythmias
  1. Sinus Node arrhythmias
  2. Atrial arrhythmias
  3. Junctional arrhythmias
  4. Ventricular arrhythmias
  5. Atrioventricular Blocks
- E. Treating Arrhythmias
  1. Non-pharmacologic Treatments
  2. Pharmacologic Treatments
- F. 12-Lead ECG
  1. Acquisition Modes
  2. Lead Placement
  3. Interpreting a 12-lead ECG
- G. Pathophysiology, Assessment, and Management of Specific Cardiovascular Conditions
  1. Acute Coronary Syndromes
  2. Heart Failure
  3. Cardiac Tamponade
  4. Cardiogenic Shock
  5. Hypertensive Emergencies
  6. Infectious Diseases of the Heart
  7. Vascular Disorders