

Jackson College  
Emergency Medical Services Department  
Paramedic Technology: Cardiology I  
EMS 163, Fall 2016



**Primary Instructor Coordinator:** Chad Rodgers  
**Email:**  
**Phone:**

**Class Days/Times:** Lecture Thursday 01:30PM - 03:45PM

**Classroom:** HLC 211

**Total Credits:** 2.25 credit hours

**This course is approved by the MDCH Program Approval Number: P-10-0015**

### **Course Description**

This is a course designed to provide knowledge in cardiology to fulfill the needs of the Paramedic program. This course involves medical procedures and use of equipment as stated by the U.S. Department of Transportation, Michigan Department of Community Health, and the American Heart Association Advanced Cardiac Life Support standards. Topics include: rapid interpretation of EKGs, static recognition of EKGs, electrical therapy, pharmacological therapy, and basic algorithms for treatment of cardiac arrhythmias.

### **Course Goals**

The EMT-Paramedic represents the highest level of skills in the emergency medical system. Formal classroom experiences are enhanced with combined time in an emergency room, on an ambulance, as well as other specialty training opportunities including airway management in the operating room. Coursework typically emphasizes emergency skills such as managing respiratory, trauma, and cardiac emergencies. The program reviews all material covered in EMT-Basic and includes more advanced training in acid-base balance, intravenous access and maintenance, pharmacology, cardiology and advanced airway management.

### **Course Prerequisite**

- Department approval
- Concurrent enrollment in EMS 160, 161, 162, and 166.
- **BIO 155 or BIO 253 & BIO 254 or BIO132 & MOA/LPN 141 (must be completed before end of program)**

### **Course Objectives**

**At the completion of this program you should be able to:**

1. Relate the anatomy to the pathophysiology of the cardiovascular system.
2. Relate the anatomy to the pathophysiology of the cardiac conduction system.
3. Define the principals of electro-cardiology
4. Apply the assessment principles specific to a patient with cardiovascular complaints.
5. Relate the pathophysiology, defining characteristics, clinical presentation, and management of cardiac rhythms.
6. Demonstrate the management principles of the cardiovascular patient.
7. List a systematic approach to dysrhythmia interpretation

8. Demonstrate the management of cardiac dysrhythmias as recommended by the current AHA ACLS guidelines.
9. Recall key EKG interpretation criteria for diagnosing EKG rhythms.

### **Jackson College Education Goals**

The course goals and objectives incorporate specific Associate Degree Outcomes (ADOs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges, universities, and reflect input from the professional communities we serve. ADOs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in many certification programs.

### **Course ADOs**

This course utilizes Ado 7: Critical Thinking-Developing. As a Paramedic candidate the need for critical thinking is great. One must be able to recognize problems and create a detailed action plan utilizing the skill of critical thinking. This course measures the skill of critical thinking through assessment based management and ability to create a dynamic ongoing treatment plan.

### **Required Texts**

- *Paramedic Care Principles & Practice 4<sup>th</sup> Edition (Volume 1-7)*
- *Advanced Cardiac Life Support Provider Manual (2010 Guidelines)*
- *Basic Arrhythmias, 7<sup>th</sup> Edition: Gail Walraven*
- *Prehospital Emergency Pharmacology (PEP), 7<sup>th</sup> Edition*

### **Suggested Texts**

- EMS Field Guide, Advanced or Critical Care version
- Medical Dictionary
- Nursing Drug Guide

### **Equipment and Uniforms**

- Paramedic shirt available through JC bookstore (Maroon in color)
- Navy blue EMS slacks
- Black polishable shoes
- Black belt
- Watch (with second hand)
- Navy jacket (no logo) for clinical/internship and classroom use (no other jackets will be allowed)
- JC Student ID badge is required to be worn clipped on the shirt or worn on a lanyard during class (lanyards not allowed on clinical/internship)
- USB Flash Drive – storage amount at your discretion

### **Lecture Tardiness**

Any student missing more than 5 minutes, but less than  $\frac{1}{4}$  of the class period will be considered tardy. First tardy will result in a verbal warning. Second tardy will result in a written warning. At the third infraction, a full absence will be incurred. Chronic tardy or absence could prevent the student from a completion certificate and grounds for removal from the program. Any missing time will be recorded and counted towards the student's attendance.

### **Attendance**

There are NO excused absences in this program. Due to the practically oriented nature of this program, as well as the repetition necessary to develop high quality patient care skills, minimal hour requirements are set forth by the MDCH program objectives. Any student missing more than 6 HOURS total, in EMS 163, will be dismissed from the Paramedic Program and will not be eligible for the MDCH course completion roster

### **Classroom Etiquette**

For your benefit and for the benefit of your classmates follow appropriate classroom behavior:

- At all times in class the student must be considerate to your classmates and to your instructor.

Last Update: August 30, 2016

- Ask pertinent questions; contribute to discussions; avoid "private" conversations that distract the instructor and other students. You may be asked to leave if you are disturbing the class. Do not answer questions that are not directed to you. Allow the instructor to clarify the material.
- No cell phone use is allowed during class (including texting). All ringers must be on silent.
- No tobacco usage, in any form, will be allowed in the classroom. (JC is a tobacco free campus)
- No sleeping. Come to class fresh and ready to learn.
- No laptop use permitted unless it is directly related to the classroom lecture or course work. This would require prior permission by the instructor.
- Concerns must be addressed outside of the classroom with the instructor by appointment, not voiced in the classroom. In the event the concerns cannot be solved with the instructor, a formal complaint must be brought to the attention of program director. See the specific complaint process in your EMS handbook or go to the link below.  
<http://www.jccmi.edu/administration/deans/StudentComplaintProcess.htm>
- The instructors welcome student's questions and concerns. Please be considerate of their time outside of the classroom.
- Food in the classroom is a privilege and will not be distracting or messy. Any mess left in the classroom or distracting behavior will result in the loss of the entire class's food privilege.

### **Jackson College program requirements for recommendation for the MDCH completion roster**

- Students must obtain an 80% or better as an overall class grade in each EMS course.
- Obtain at least a 75% on the final exam at the end of each course.
- Students must successfully complete all practical exams for the course.
- Students must successfully complete all required clinical hours, including hospital specialties and ambulance internship compliant with current contracts.
- Students must show professional growth within the affective learning domain.
- Students must meet the minimum required hours for both classroom and clinical as set forth by the JC Program.

### **Affective Domain Evaluations**

Periodically through the clinical rotations and during class, the students will be subject to evaluation via the affective domain. This includes attitude, empathy, and overall professionalism. Any student receiving an overall negative affective domain evaluation will be given a written warning and the instructor will schedule a meeting to review the form with the course coordinator and student. Steps for corrective action will be documented. This will result in possible disciplinary action up to and/or including dismissal from the rotation or program. During the scheduled time for review, the student will be removed from clinical rotations.

### **Classroom Lecture Grading Procedure**

Written exams are cumulative over the course and will be graded and scored on the percentage of correct answers. They may consist of multiple-choice, true/false, and short answer questions. There will be no late exams permitted. Tests will be administered in a secure environment and may be presented in the JC testing center. It is the student's responsibility to make accommodations to complete the test in the allotted time frame presented by the instructor. **Quizzes** may be online or in class and also may be administered with a time restriction.

**Students who do not officially withdraw from this course and/or receive an overall score below 80%, fail to take the final exam, fail to complete all clinical/internship requirements, or are deemed unsatisfactory in the affective domain will not be eligible for advancement within the Paramedic Program.**

<u>Grade Item</u>	<u>Percentage Possible</u>
Attendance	15%
Quizzes	35%
Mid Term	25%
Final Written Test	25%

<b>JC Grading Scale:</b>	
93-100	4.0
89-92	3.5
85-88	3.0
80-84	2.5
75-79	2.0
70-74	1.5
65-69	1.0
60-64	0.5
00-59	0.0

Minimum Passing GPA

### **Method of Instruction**

Any combination or all of the following: Lecture, handouts, class assignments, computer screen-projections, demonstrations, hands-on lab projects, recitation, frequent quizzing, group work, DVD/video tapes, case studies, field trips, simulation, computer- distance learning through Jet Net, and other projects.

### **Platinum Testing**

The students will be issued authority to use the EMSCAT. Students may not in any way cut and paste, copy or reproduce the test questions. This is a copyright infringement. Students found reproducing this test material will be immediately dismissed from the program and their information will be turned over to legal affairs and to the Platinum Education Group.

See academic honesty policy [http://www.jccmi.edu/administration/deans/Student\\_Resources.htm](http://www.jccmi.edu/administration/deans/Student_Resources.htm)

Test materials may be generated from any validated source or may be written by the JC EMS program and validated against the National Curriculum. Platinum quizzes and tests are monitored by the instructors. You are only allowed to access the quizzes/tests that you have been cleared to take.

### **Students with Disabilities**

If there is a student in this class with a special need because of learning, physical, or other disability, contact the instructor(s) and Student Services immediately.

*“Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the office of Learning Support Services at 787-0800, extension 8270/8553 as soon as possible to ensure that such accommodations are implemented in a timely fashion.”*

National Registry ADA Policy Link: [www.nremt.org/nremt/about/policy\\_accommodations.asp](http://www.nremt.org/nremt/about/policy_accommodations.asp)

JC Disclosure Policy: JC adheres to FERPA <http://www2.ed.gov/policy/gen/guid/fpc/ferpa/index.html>

### **Changes in Syllabus**

Schedule and course outline may change due to weather, illness, or extreme circumstance. Students will be notified in writing if course outline will change.

**This syllabus may be adjusted at any time if the instructor(s) or Course Coordinator deems it necessary.**

Wk.	Date	Pre-reading			Subject	Assignment
		Book	Chapter	Pages		
1	9-8-16	BA	1 & 2		Introduction, Cardiovascular A/P, ECG Electrophysiology	
2	9-15-16	BA	1 & 2		Waveform Measurement, ECG Analysis	
3	9-22-16	BA	3		Action Potential / Resting Potential	
4	9-29-16	BA	4		SA Node / Impulse Generation, Sinus Rhythms, Origins of Dysrhythmias, Sinus Rhythm Variations, Sick Sinus Syndrome	
5	10-6-16	BA	3 & 4		Assessment of the Cardiovascular Patient, Management of Cardiovascular Emergencies	
6	10-13-16	BA	5		Atrial Pathways / Back-up Impulse Generation, Atrial Rhythms, Premature Atrial Complexes, Escape Rhythms ACLS – Chest Pain, ACS	
		<b>ACLS</b>	<b>Chest Pain</b>			
7	10-20-16	BA	6		AV Node (James, Mahaim, Bundle of Kent Fibers), Bundle of His, Junctional Rhythms, Premature Junctional Complexes, Escape Rhythms Wolff-Parkinson-White Syndrome ACLS - Tachycardias	
8	10-27-16	<b>Cardiology I Midterm Examination</b>				
9	11-3-16	BA	7 & 8		Bundle Branches / Fascicular Divisions, Purkinje Fibers, Ventricular Rhythms, Premature Ventricular Complexes (and Classification), Escape Rhythms, Agonal / Asystolic Rhythms ACLS - Bradycardias	
		<b>ACLS</b>	<b>Bradycardia</b>			
10	11-10-16	BA	7		Ventricular Standstill ACLS – Arrest (VF/Pulseless VT)	
		<b>ACLS</b>	<b>VF/VT</b>			
11	11-17-16	BA	8		Junctional Blocks – First Degree, Second Degree (Types I and II), Third Degree ACLS – Arrest (Asystole, PEA)	
		<b>ACLS</b>	<b>PEA/Asytote</b>			
		BA	8			
12	11-24-16	<b>THANKSGIVING BREAK, NO CLASSES</b>				
13	12-1-16	<b>ACLS</b>	<b>Review</b>		Ventricular Tachycardia Variations ACLS Algorithm Review; 2-Day AHA ACLS course preparation	
*	TBD	<b>ACLS Day 1</b>				
*	TBD	<b>ACLS Day 2</b>				
14	12-8-16	BA	Review Chapters		<b>Cardiology I Review</b>	
		<b>ACLS</b>	Review Chapters			
15	12-15-16	<b>FINAL EXAM Cardiology Topics</b> Rhythm Interpretation – Sinus Rhythms, Atrial Rhythms, Junctional Rhythms, Ventricular Rhythms, Junctional Blocks, Premature Complexes (Atrial, Junctional, and Ventricular)				