Jackson College
Emergency Medical Services Department
Paramedic Technology: Pharmacology I
EMS 162, Fall 2016

Primary Instructor Coordinator: Chad Rodgers
Email:
Office Phone:

Class Days/Times: Thursday 10:30AM - 12:45PM

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 course is designed to provide the Paramedic students with a knowledge of basic pharmacological principles, biological factors influencing drug actions, predictable effects of drugs on physiologic problems, modifiers of predictable effects, commonalities and variations between the actions of drugs employed for comparable therapeutic effect, adverse effects of drugs that can and do commonly occur, and application for pharmacological therapy in the pre-hospital setting. Concentration will focus on cardiovascular drugs in this semester.

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, 163, 164, 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. Apply the concepts of pharmacology in relation to history, definitions, classification, and applicable references.
2. Summarize the history of governmental drug control and standardization.
3. Differentiate among all levels of drug control.
4. Distinguish special considerations in drug therapy.
5. Relate the paramedic's use of drugs to scope of management of overall patient care.
6. Compare and contrast the general properties of drugs.
7. Relate the routes of administration to the mechanism of drug action.

8. Relate the processes of pharmacokinetics and pharmacodynamics to medication administration.
9. Integrate the pathophysiology of drugs by classification.
10. Compare and contrast factors relating to drug response and interaction.
11. Evaluate specific drug profiles of commonly used paramedic drugs.
12. Characterize the specific anatomy and physiology pertinent to medication administration.
13. Calculate drug doses utilizing mathematical principles.
14. Summarize use of universal precautions and body substance isolation (BSI) procedures and disposal of contaminated items and sharps.
15. Use antiseptics and disinfectants.
16. Differentiate between the Intravenous Fluids.
17. Differentiate among the different routes of medication administration.

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 4th Edition (Volume 1-7)*
- *Advanced Cardiac Life Support Provider Manual (2010 Guidelines)*
- *Basic Arrhythmias, 7th Edition: Gail Walraven*
- *Prehospital Emergency Pharmacology (PEP), 7th 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 ¼ 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 162, 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.
- 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.

Grade Item	Percentage Possible
Attendance	15%
Assignments	10%
Quizzes	25%
Mid Term	25%
Final Written Test	25%

JC Grading Scale:

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

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
JC Disclosure Policy: JC adheres to FERPA http://www2.ed.gov/policy/gen/guid/fpco/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
		Volume	Chapter	Pages		
1	9-6-15	PEP	1 & 2	1-45	Introduction, Medication Safety, Legislation, Naming, Classifications, Drug Terminology, Pharmacological Concepts, Drug Cards, List of Medications	
		Volume 2	Ch. 3	139-151		
2	9-13-15	PEP	Ch.2	25-45	Intravenous Fluids, Pharmacological Concepts, Autonomic Nervous System Introduction (Sympathetic / Parasympathetic)	
		PEP	Ch. 5	84-113		
		Volume 3	Ch. 4	229-253		
		ACLS	Chest Pain/ACS			
3	9-20-15	PEP	Ch. 3	46-61	Medication Administration; Drug Classifications - Sympathomimetics, Beta Agonists	
		PEP	Ch.7	131-54		
		Volume 2	Ch. 4	284-293		
4	9-27-15	PEP	Ch. 4	62-83	Medication Administration (Drug Calculations); Drug Classifications - Antiarrhythmics	
		PEP	Ch. 6	114-125		
		PEP	Ch. 7	126-224		
5	10-4-15	PEP	Ch. 8	225-261	Respiratory Medications	
		PEP	Ch. 9	251-263		
6	10-11-15	PEP	Ch. 7	173-93	Chest Pain, Acute Coronary Syndromes (ACS)	
		PEP	Ch. 7	195-199		
		PEP	Ch. 7	205-209		
		ACLS	Chest Pain/ACS			
7	10-18-15	PEP	Ch. 16	369-402	Analgesics, Pain Response	
8	10-25-15	**EMT 162 Pharmacology I – Midterm Examination**				
9	11-1-15	PEP	Ch. 7	155-171	ACLS Bradycardia; Antiarrhythmics I – Classifications / Categories; Class I Antiarrhythmics; Drug Calcs – Drips (Fluid over Time, basic calculation)	
		PEP	Ch. 7	174-175		
10	11-8-15	PEP	Ch. 7	155-171	ACLS Tachycardia; Antiarrhythmics II – Classes, II, III, IV, and V (Other); Drug Calcs – Drips (Lidocaine, Dopamine, Clock Method)	
		PEP	Ch. 7	174-175		
11	11-15-15	PEP	Ch. 7	210-224	Antihypertensives I; Drip Calculation Review, Antihypertensives II	
12	11-22-15	THANKSGIVING BREAK, NO CLASS				
13	11-29-15	PEP	Review Chapters		EMS 162 Pharmacology I Review	
		ACLS	Review Chapters			
14	12-6-15	ACLS	Pg. 33-146		ACLS Medication Review; 2-Day AHA ACLS course preparation	
15	12-13-15	**Final Examination** **Medications –** Adenosine, Albuterol, Amiodarone, Aspirin, Atropine, Diltiazem, Dopamine, Epinephrine, Fentanyl, Ipratropium, Lidocaine, MgSO4, Morphine, Naloxone, NTG, Oxygen **Pharmacology Topics –** Medication Safety, Medication Legislation, Naming, Classifications, Drug Schedules, Medication Interactions, Drug Terminology, Pharmacological Concepts				

Last Update: August 30, 2016