EMERGENCY MEDICAL SERVICES TECHNOLOGY

(CRITICAL CARE/ADVANCED EMERGENCY MEDICAL TECHNOLOGY)

MISSISSIPPI CURRICULUM FRAMEWORK

Paramedic - CIP: 51.0904-(Emergency Medical Technology/Technician EMT Paramedic)

2025

Published by:
Mississippi Community College Board
Division of Workforce, Career, and Technical Education
3825 Ridgewood Road
Jackson, MS 39211
Phone: 601-432-6155
Email: curriculum@mccb.edu

Faculty Writing Team Members

Brad Shirley, Copiah Lincoln Community College, Wesson, MS
Yancy Brewer, Holmes Community College, Ridgeland, MS
Jennifer Lance, Northwest Community College, Senatobia, MS
Hillary White, Mississippi Gulf Coast Community College, Gulfport, MS
Kristi Glasson, Itawamba Community College, Tupelo, MS
Sandra Hultz, Holmes Community College, Ridgeland, MS
M. Eric Williams, Assistant Director, Jones County Junior College, Ellisville, MS
Benji Sessums, Director, Jones County Junior College, Ellisville, MS
Dr. Jonathan McEwen, Jones County Junior College, Ellisville, MS
Dr. Ron Morgan, Mississippi Gulf Coast Community College, Gulfport, MS
Tracy Burke, Mississippi Gulf Coast Community College, Gulfport, MS
David Kuchta, Director, Northwest Community College, Senatobia, MS
Steven Todd, Program Director, Meridian Community College, Meridian MS
Brian Staley, Director, Hinds Community College, Jackson, MS Mark
Galtelli, Director, Holmes Community College, Ridgeland, MS
Debbie Roebuck, Director, Itawamba Community College, Tupelo, MS

Administrator Writing Team Members

Angie Nelson, Chair, Mississippi Gulf Coast Community College, Ridgeland, MS
Dr. Libby Mafaffey,Dean, Hinds Community College
Christy Bokros, Assistant Dean, Hinds Community College, Jackson, MS
Dr. Rilla Jones, Dean, Itawamba Community College
Patricia Kelly, Dean, Mississippi Delta Community College

Business and Industry Contributing Team Members

Alisa Williams, NRP, Bureau of Emergency Medical Services, Jackson, MS *
Steven Jones, NRP, Bureau of Emergency Medical Services, Jackson, MS
Joel Ellzie, American Medical Response, Gulfport, MS*
Chuck Carter, AAA Ambulance Service, Hattiesburg, MS*
David Grayson, Care Med, Winona, MS*
Sherry Brewer, SCRMC, Ellisville, MS*
Todd Pounds, AAA Ambulance, Hattiesburg, MS*
Craig Jackson, ASAP EMS, Ellisville, MS*
Stanley Brewer, Wayne General Hospital, Ellisville, MS*
Ayrn Collins, EMSERV/SCRMS, Ellisville, MS*
Dwayne Tullos, Lifeguard Ambulance, Ellisville, MS*
Justin Harvey, Covington County Hospital, Collins, MS*
Brian Grantham, Rankin County EMA, Brandon, MS*
Jeff Blackledge, Clinton Fire, Clinton, MS*
Terry Wages, Pafford EMS, Fire Chief, Terry, MS*
Bridget Watkins, Life Care EMS, Carthage, MS*
Ben Richards, Care Flight, Tupelo, MS*
Scott Stinson, AAA, Hattiesburg, MS*
Suzanne James, Air Evac, Batesville, MS*
James Duke, Southaven Fire Department, Southaven, MS*

***Denotes industry members who attended the writing meeting**

Office of Curriculum and Instruction Team Members

Scott Kolle, Ph.D., Director of Curriculum, Mississippi Community College Board
LaToya Sterling, Ph.D. Curriculum Specialist, Mississippi Community College Board

The Office of Curriculum and Instruction (OCI) was founded in 2013 under the Division of Workforce, Career, and Technical Education at the Mississippi Community College Board (MCCB). The office is funded through a partnership with The Mississippi Department of Education (MDE), who serves as Mississippi's fiscal agent for state and federal Career and Technical Education (CTE) Funds. The OCI is tasked with developing statewide CTE curriculum, programming, and professional development designed to meet the local and statewide economic demand.

For information, please contact curriculum@mccb.edu

NATIONAL CERTIFICATION & STANDARDS

National Emergency Medical Services Education Standards
The **National EMS Education Standards** represent another step toward realizing the vision of the *1996 EMS Agenda for the Future*, as articulated in the *2000 EMS Education Agenda for the Future: A Systems Approach*.

The National EMS Education Standards outline the minimal terminal objectives for entry-level EMS personnel to achieve within the parameters outlined in the National EMS Scope of Practice Model. Although educational programs must adhere to the Standards, its format will allow diverse implementation methods to meet local needs and evolving educational practices. The less prescriptive format of the Standards will also allow for ongoing revision of content consistent with scientific evidence and community standards of care.

In implementing the Standards, EMS instructors and educational programs will have the freedom to develop their own curricula or use any of the wide variety of publishers' lesson plans and instructional resources that are available at each licensure level. Consistent with the EMS Education Agenda, EMS accreditation authorities will use the Standards as the framework for evaluation of program curricula.

The National EMS Education Standards are not a stand-alone document. EMS education programs will incorporate each element of the education system proposed in the Education Agenda. These elements include:
- National EMS Core Content
- National EMS Scope of Practice
- National EMS Education Standards
- National EMS Certification
- National EMS Program Accreditation

This integrated system is essential to achieving the goals of program efficiency, consistency of instructional quality, and student competence as outlined in the Education Agenda.

For more information related to the National EMS Education Standards, please visit www.ems.gov.

National Registry of Emergency Medical Technicians- Emergency Medical Technicians Exam

For more information related to the National Registry of Emergency Medical Technicians-Paramedic Exam, please visit www.nremt.org.

National Registry of Emergency Medical Technicians- Paramedic Exam
For more information related to the National Registry of Emergency Medical Technicians-Paramedic Exam, please visit www.nremt.org.

Mississippi Bureau of Emergency Medical Services
This framework is in compliance with the Mississippi EMS Laws, Rules and Regulations.

For more information related to the Mississippi Bureau of Emergency Medical Services, please visit www.msdh.ms.gov.

Industry Job Projection Data

The Emergency Medical Technician and Paramedic require a postsecondary career and technical award. There is expected to be a 25.06% increase in occupational demand at the regional level and state level and 29.49% increase at the national level. Median annual income for this occupation is $30, 160.00 at the state level. A summary of occupational data from www.swib.ms.gov/DataCenter/ is displayed below: **Table 1: Education Level**

Program Occupations	Education Level
EMERGENCY MEDICAL TECHNICIANS AND PARAMEDICS	POSTSECONDARY CAREER AND TECHNICAL AWARD

Table 2: Occupational Overview

	Region	State	United States
2014 Occupational Jobs	2099	2099	224025
2024 Occupational Jobs	2625	2625	290079
Total Change	526	526	66054
Total % Change	25.06%	25.06%	29.49%
2014 Median Hourly Earnings	$14.50	$14.50	$15.24
2014 Median Annual Earnings	$30,160.00	$30,160.00	$31,699.20
Annual Openings	52	52	6605

Table 3: Occupational Breakdown

Description	2014 Jobs	2024 Jobs	Annual Openings	2014 Hourly Earnings	2014 Annual Earnings 2,080 Work Hours
EMERGENCY MEDICAL TECHNICIANS AND PARAMEDICS	2099	2625	52	$14.50	$30,160.00

Table 4: Occupational Change

Description	Regional Change	Regional % Change	State % Change	National % Change
EMERGENCY MEDICAL TECHNICIANS AND PARAMEDICS	526	25.06%	25.06%	29.49%

Articulation

There are no state-wide articulation agreements for this program.

Technical Skills Assessment

Colleges should report the following for students who complete the program with a career certificate, technical certificate, or an Associate of Applied Science Degrees for technical skills attainment. To use the approved Alternate Assessment for the following programs of study, colleges should provide a letter of Notification to the Director of Career Technical Education at the MS Community College Board. Please see the following link for further instructions: http://www.mccb.edu/wkfEdu/CTDefault.aspx.

CIP Code	Program of Study	
51.0904	Emergency Medical Technology/Technician	
Level	**Standard Assessment**	**Alternate Assessment**
	National Registry of Emergency Medical Technicians- Paramedic Exam National Registry of Emergency Medical Technicians- EMT Exam	

Online And Blended Learning Opportunities

Course content includes lecture and laboratory semester credit hours. Faculty members are encouraged to present lecture related content to students in an online or blended learning environment. Training related to online and blended learning will be available to faculty members through the MS Community College Board.

Instructional Strategies

Instructional strategies for faculty members implementing the curriculum can be found through the Office of Curriculum and Instruction's professional development.

Assessment Strategies

The Office of Curriculum and Instruction's professional development offer assessment strategies to faculty members implementing the curriculum. Additionally, standards were included in course content when appropriate.

Research Abstract

In the fall of 2018, the Office of Curriculum and Instruction (OCI) hosted an interest meeting with the different industry members who made up the advisory committees for the Advanced Emergency Medical Technology program and Critical Care program. An industry questionnaire was used to gather feedback concerning the trends and needs, both current and future, of their field. Program faculty, administrators, and industry members were consulted regarding industry workforce needs and trends.

Industry advisory team members from the college involved with this program were asked to give input related to changes to be made to the curriculum framework. Specific comments related to soft skills needed in this program include having a positive attitude, being at work every day and on time, and having reading and writing skills to complete work orders and other forms. Occupation-specific skills stated include knowing how to communicate with the customers, basic math skills, troubleshooting with customer concerns, and understanding the importance of confidentiality.

Revision History

2018, Office of Curriculum and Instruction, Mississippi Community College Board

2024, Office of Curriculum and Instruction, Mississippi Community College Board

PROGRAM DESCRIPTION

Critical Care Paramedic

The Critical Care Paramedic Program is a post- secondary program drawing its students from individuals already possessing a valid Nationally Registered Paramedic and Mississippi Paramedic certification. The Critical Care Paramedic (CCP) will teach current paramedics to provide for the on-going care of a critically injured or ill patient during an inter-facility transport and in other special situations such as rotor wing or fixed wing transport. The program is intended to expand the knowledge base and skill set of the paramedic beyond the level of the entry level paramedic to perform special critical care assessments and treatments.

Instruction is provided through comprehensive approach to include a complex knowledge of anatomy, physiology, and pathophysiological processes as well as competency-based instruction in critical care assessment and critical care management skills required for the care of complex critical care neonatal, pediatric, and adult patients. Clinical internship is required in specific critical care specialties in the hospital and transport environment.

To be eligible to achieve CCP Certification through the Mississippi Bureau of EMS, participants must successfully complete all components of the CCP program and pass the FP-C or CCP-C exam. The CCP program prepares students to take the Certified Flight Paramedic (FP-C) or Critical Care Paramedic (CCP-C) exam.

Students completing the course will receive a Certificate in Critical Care Paramedic studies. Those students seeking an AAS degree may request articulation of up to 30 hours of initial paramedic education. Upon completion of the prescribed academic course work, students are eligible to be awarded an AAS degree.

EMERGENCY MEDICAL SCIENCES

PARAMEDIC PROGRAM ADMISSION POLICY

1. Must meet college admissions requirements

2. Must have current Nationally Registered Paramedic.

3. Must be a current Mississippi-certified Paramedic in good standing prior to clinical*.

4. Must present proof of three years experience as a Nationally Registered Paramedic**.

5. Must provide past academic records for review for admissions.

6. Must successfully pass a Criminal Background Check as required by Mississippi State Law.

**Subject to Mississippi EMS: The Law, Rules, and Regulations.*

***Other healthcare professionals, such as Physicians, Physician Assistants, Nurse Practitioners, Registered Nurses or Respiratory Therapist may take the course to improve their understanding of critical care medicine; however, these participants are not eligible for licensure as a Critical Care Paramedic in the State of Mississippi.*

Advanced Emergency Medical Technician

This course is required to apply for certification as an Advanced Emergency Medical Technician (AEMT). This course introduces the theory and application of concepts related to the profession of the AEMT. The primary focus of the AEMT is to provide basic and limited advanced emergency medical care and transportation for critical and emergent patients across the lifespan who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Topics include: extending the knowledge of the EMT to a more complex breadth and depth, intravenous access and fluid therapy, medication administration, blind insertion airway devices, as well as the advanced assessment and management of various medical illnesses and traumatic injuries. This course is based on the NHTSA National Emergency Medical Services Education Standards. Requires licensure or eligibility for licensure at the EMT level and the EMS course sequence listed before eligibility to test NREMT AEMT exam is granted.

REQUIRED COURSES FOR NREMT ADVANCED EXAM ELIGIBILITY (courses can be combined sequence or lab separated lab)

- EMS 1117 Emergency Medical Technician (EMT)
- EMS 1163 Emergency Medical Technician I (EMT)
- EMS 1174 Emergency Medical Technician II (EMT)
- EMS 1133 Foundations of Paramedicine-Lecture & Lab
- EMS 1142 Foundations of Paramedicine-Lecture
- EMS 1151 Foundations of Paramedicine-Lab
- EMS 1213 Concepts of Airway and Respiratory Medicine-Lecture & Lab
- EMS 1242 Concepts of Airway and Respiratory Medicine-Lecture
- EMS 1251 Concepts of Airway and Respiratory Medicine-Lab
- EMS 1325 Concepts of Cardiovascular Medicine-Lecture & Lab
- EMS 1343 Concepts of Cardiovascular Medicine-Lecture
- EMS 1352 Concepts of Cardiovascular Medicine-Lab
- **EMS 1514 Practicum I**
- EMS 1913 Fundamentals of Advanced Emergency Medical Technician
- EMS 2211 Fundamentals of Advanced Emergency Medical Technician Practicum II
- EMS 2312 Fundamentals of Advanced Emergency Medical Technician
- EMS 2715 Concepts of Traumatic Medicine-Lecture & Lab
- EMS 2743 Concepts of Traumatic Medicine-Lecture
- EMS 2752 Concepts of Traumatic Medicine-Lab
- EMS 2912 Concepts of EMS Operations

***Students must complete ___180____ clinical\field hours of EMS 1514*

Career Certificate Option 1 Critical Care

Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Clinical	Total Hours	Program Certifications
EMS 2618	Critical Care Paramedic I	8	8	0	0	120	
EMS 2622	Critical Care Paramedic Lab	2	0	4	0	60	
EMS 2632	Critical Care Paramedic Practicum	2	0	0	12	108	

****Students must meet all educational requirements as defined in Chapter 9: Critical Care Paramedic of the Mississippi EMS Laws, Rules and Regulations**.

Option 2 Critical Care

Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Clinical	Total Hours	Program Certifications
EMS 2618	Critical Care Paramedic I	8	8	0	0	120	
EMS 2622	Critical Care Paramedic Lab	2	0	4	0	60	
EMS 2632	Critical Care Paramedic Practicum	2	0	0	12	108	
	Instructor Approved Elective	3					

****Students must meet all educational requirements as defined in Chapter 9: Critical Care Paramedic of the Mississippi EMS Laws, Rules and Regulations**.

Associate Applied Science Degree Option 3 Critical Care

Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Clinical	Total Hours	Program Certifications
EMS 2618	Critical Care Paramedic I	8	8	0	0	120	
EMS 2622	Critical Care Paramedic Lab	2	0	4	0	60	
EMS 2632	Critical Care Paramedic Practicum		0	0	12	108	
	EMS Articulated Courses	30					

***Colleges choosing to use this option must use articulated 30 credit hours of EMS-Paramedic courses.**

Advanced Emergency Medical Technician. Option 1

Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Clinical	Total Hours	Program Certifications
EMS 1133	Foundations of ParamedicineLecture and Lab	3	2	2	0	60	
EMS 1213	Concepts of Airway and Respiratory Medicine-Lecture & Lab	3	2	2	0	60	
EMS 1325	Concepts of Cardiovascular Medicine-Lecture & Lab	5	3	4	0	105	
EMS 2715	Concepts of Traumatic Medicine-Lecture & Lab	5	3	4	0	105	
EMS 2912	Concepts of EMS Operations	2	2	0	0	30	
EMS 1514	Practicum I	4	0	0	12	180	
EMS 1913	Fundamentals of Advanced Emergency Medical Technician	3	2	0	1	75	

Advanced Emergency Medical Technician. Option 2

Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Clinical	Total Hours	Program Certifications
EMS 1142	Foundations of ParamedicineLecture	2	2	0	0	30	
EMS 1151	Foundations of ParamedicineLab	1	0	2	0	30	
EMS 1242	Concepts of Airway and Respiratory Medicine-Lecture	2	2	0	0	30	
EMS 1251	Concepts of Airway and Respiratory Medicine-Lab	1	0	2	0	30	

EMS 1343	Concepts of Cardiovascular MedicineLecture	3	3	0	0	45	
EMS 1352	Concepts of Cardiovascular Medicine-Lab	2	0	4	0	60	
EMS 2743	Concepts of Traumatic Medicine-Lecture	3	3	0	0	45	
EMS 2752	Concepts of Traumatic Medicine-Lab	2	0	4	0	60	
EMS 2912	Concepts of EMS Operations	2	2	0	0	30	
EMS 1514	Practicum I	4	0	0	12	180	
EMS 2312	Fundamentals of Advanced Emergency Medical Technician Lecture	2	2	0	0	30	
EMS 2211	Fundamentals of Advanced EMTPracticum Clinical	1	0	0	1	45	

General Education Core Courses –Critical Care

To receive the Associate of Applied Science Degree, a student must complete all of the required coursework found in the Career Certificate option, Technical Certificate option and a minimum of 15 semester hours of General Education Core. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester or provided primarily within the last semester. Each community college will specify the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science Degree at their college. The Southern Association of Colleges and Schools (SACS) Commission on Colleges Standard 2.7.3 from the Principles of Accreditation: Foundations for Quality Enhancement[1] describes the general education core.

Section 2.7.3 In each undergraduate degree program, the institution requires the successful completion of a general education component at the collegiate level that (1) is substantial component of each undergraduate degree, (2) ensures breadth of knowledge, and (3) is based on a coherent rationale. For degree completion in associate programs, the component constitutes a minimum of 15 semester hours or the equivalent. These credit hours are to be drawn from and include at least one course from the following areas: humanities/fine arts, social/behavioral sciences, and natural science/mathematics. The courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession.

			SCH Breakdown			Program Certifications
Course Number	Course Name	Semester Credit Hours	Lecture	Lab	Total Contact Hours	
	Humanities/Fine Arts	3				
	Social/Behavioral Sciences	3				
	Math/Science*	3				
	Other academic courses per local community college requirements for AAS degree	6				

[1] Southern Association of Colleges and Schools Commission on Colleges. (2012). *The principles of accreditation:*
Foundations for quality enhancement. Retrieved from http://www.sacscoc.org/pdf/2012PrinciplesOfAcreditation.pdf

CRITICAL CARE COURSE DESCRIPTIONS

Course Number and Name: EMS 2618 Critical Care Paramedic I

Description: This course provides a complex review of medical care, procedures, and practices common to critical care transport. The student will gain a comprehensive knowledge of all aspects of critical care transport including Medical Legal, Safety, Regulations, Airway, Cardiovascular, Neurological, GI/GU, Shock, and Pharmacology.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Clinical	Contact Hours
8	8	0	0	120

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. *Apply Concepts, Components, and Medical Legal Aspects of Critical Care Transport*
   a. Describe the history of ambulance transports.
   b. Name three examples of Critical Care Transport Team composition configuration.
   c. Identify and describe the preferred qualifications of a Critical Care Transport Paramedic.
   d. Name six advanced procedures performed by a Critical Care Transport Team.
   e. Differentiate between routine and specialty equipment found on a Critical Care Transport unit.
   f. Discuss the three modes of transport for the critically ill or injured.
   g. Identify indications for critical care transport.
   h. Describe the interfacility transfer process.
   i. Apply the essential legal principles necessary to the practice of emergency medicine to the job of the critical care paramedic.
   j. Recognize and discuss the legal risks and liabilities involved in critical care transportation.
   k. Apply basic risk management principles to critical care transport.
   l. Discuss the fundamental elements of litigation, hearings and peer-review proceedings.
   m. Understand EMTALA and the implications for EMS
   n. State the appropriate steps for accepting a patient transfer
   o. State the appropriate steps in assessing and preparing for transfer
   p. State CCP responsibilities during transfer
   q. State the role of other health care providers who accompany the patient
   r. State the appropriate steps to transfer care to the receiving facility
   s. Appropriately document the transfer
   t. Identify areas of potential liability
   u. State methods to minimize risk
   v. Be familiar with current case law regarding transport

2. Apply professional knowledge to critical care transport.
   a. Differentiate operational aspects of critical care transport and conventional out of hospital care
   b. Identify four major opportunities for positive interaction that exist during a critical care transport
   c. Incorporate prospective medical control into the care of critical patients
   d. Identify critical decision points in a transport event
   e. Identify essential patient perceptions of quality service
   f. Understand the role of family members in critical care transport
   g. Recognize situations warranting diversion or interception
   h. Incorporate unique management tactics with moribund patients and families
   i. Define Boyle's Law
   j. Name the eight stressor's of flight

k. Name and describe three types of barotrauma
l. Explain how an unpressurized medical cabin can affect equipment
m. Explain "time of useful consciousness"
n. List the objective signs and symptoms of hypoxia
o. List the subjective signs and symptoms of hypoxia
p. Name six special considerations that should be taken with patients being air transported
q. Explain how a negative G-force affects the body
r. Define Dalton's law
s. Name three considerations in preventing hearing loss
t. List four contributing factors to crew member fatigue
u. Understand aeromedical safety and accreditation standards

3. Apply complex understanding of Pharmacology for Critical Care Transport
a. Identify the indications, mechanism of action, pharmacokinetics, dosing and side effects of haloperidol
b. Identify the mechanism of action of benzodiazepine drugs
c. Compare the dosing and side effects of diazepam, lorazepam and midazolam
d. Identify the indications, mechanism of action, pharmacokenetics, dosing and side effects of flumazenil
e. Identify the indications, mechanism of action, pharmacokinetics, dosing, side effects, drug interactions and administration considerations of propofol
f. Identify the mechanism of action, pharmacokinetics, and side effects of morphine
g. Identify the mechanism of action, pharmacokinetics, and side effects of naloxone
h. Identify the mechanism of action, pharmacokinetics, and toxicity of Succinylcholine
i. Identify the indications, mechanism of action, pharmacokinetics, side effects and drug interactions of pancuronium, vecuronium and atracurium
j. Identify the order of paralysis
k. Discuss the adverse effects of prolonged paralysis
l. Identify the role of “train of four” monitoring when using paralytics
m. Compare the mechanism of action, dosing, pharmacokinetics, and adverse effects of captopril, nifedipine and clonidine
n. Identify the mechanism of action, pharmacokinetics, dosing, toxicity and administration considerations of nitroprusside
o. Identify the mechanism of action, pharmacokinetics, dosing and adverse effects of labetalol
p. Compare the advantages and disadvantages of crystalloids and colloids
q. Compare the use, dose and adverse effects of albumin, plasma protein fraction, Hetastarch and Dextran
r. Identify the indications for vasopressors
s. Compare the effects, dosing and adverse effects of dopamine, epinephrine, norepinephrine, phenylephrine and dobutamine.
t. Identify the pharmacology and effects of beta receptor stimulation for beta agonists
u. Compare the pharmacokinetics, dosing, delivery, and adverse effects of albuterol, epinephrine and terbutaline
v. Identify the pharmacology, metabolism, adverse effects, drug interaction and dosing of metoproterenol and theophylline
w. Identify the pharmacology and dosing of anticholinergics
x. Compare and contrast anticholinergics and beta agonists
y. Identify the pharmacology and uses of magnesium

z. Identify the mechanism of action, ECG effects, uses, pharmacokinetics, dosing and toxicity of Class IA antiarrhythmic drugs

aa. Identify the mechanism of action, ECG effects, uses, pharmacokinetics, dosing and toxicity of Class IB antiarrhythmic drugs

bb. Identify the mechanism of action, ECG effects, and uses of Class IC antiarrythmic drugs

cc. Identify the mechanism of action, ECG effects, and uses of Class II antiarrythmic drugs

dd. Identify the mechanism of action, ECG effects, uses, pharmacokinetics, adverse effects and drug interactions of Class III antiarrhythmic drugs ee. Identify the mechanism of action, ECG effects, and uses of Class IV antiarrythmic drugs

ff. Compare the pharmacokinetics, dosing and adverse effects of verapamil and diltiazem gg. Identify the mechanism of action, ECG effects, uses, pharmacokinetics, administration considerations, drug interactions and toxicity of adenosine hh. Identify the pharmacology, dosage forms, pharmacokinetics, administration considerations, adverse effects, and tolerance considerations of nitrates ii. Identify the uses, side effects and patient selection criteria for beta blockers jj. Identify the uses, contraindications, and side effects of calcium channel blockers kk. Identify the absolute and relative contraindications to thrombolytic therapy ll. Compare the pharmacology, pharmacokinetics, dosing and adverse effects of TPA, streptokinase and APSAC

mm. Discuss the benefits of thrombolytic therapy

nn. Identify the mechanism of action, dosing, and clinical trial findings of aspirin as an anticoagulant

oo. Identify the mechanism of action, dosing, monitoring parameters, adverse effects and clinical trial results of heparin

pp. Identify the pharmacology, indications, monitoring parameters, drug interactions and adverse effects of warfarin *qq.* Identify the pharmacology and uses of antibiotics rr. Identify the indications, mechanism of action, pharmacokinetics, and side effects of etomidate, ketamine, propofol, and other medications commonly used during critical care transport.

ss. Differentiate between antigens, natural antibodies and acquired antibodies tt. Identify antibodies and antigens associated with specific blood types uu. Define Rh factor vv. Identify seven types of blood component therapy ww. Identify indications for blood administration xx. Describe the procedure for blood administration yy. Identify the signs and symptoms of transfusion reactions zz. Describe the management procedures for transfusion reactions aaa. Describe the indications for administration of whole blood and packed red blood cells

bbb. Describe the indications for typing, screening and cross matching blood

ccc. Describe the ABO system for matching blood ddd. Describe the characteristics of blood products eee. Describe the procedure for administration of whole blood or packed red blood cells.

4. Apply complex understanding of airway and Respiratory Diseases Pathology and Physiology as it relates to critical care transport

a. Discuss the systems based approach to performing an airway and respiratory assessment.

b. Assess oxygen saturation using a pulse oximeter.

c. Assess carbon dioxide levels using an end tidal C02 detector.

d. Identify the categories of information obtained through an ABG analysis.

e. Describe the technique for drawing an ABG.

f. Describe important landmarks and anatomical structures of the chest wall and respiratory system.

g. Describe two factors important in the generation of breath sounds.

h. Describe how to assess breath sounds for duration, pitch, and intensity.

i. Identify auscultatory sites for breath sounds assessment.
j. Define normal and adventitious breath sounds.
k. Define consolidation.
l. Perform vocal and tactile fremitus assessments of lung fields.
m. Define and describe abnormal respiratory patterns.
n. Define and describe respiration and ventilation abnormalities.
o. Understand normal physiology and pathophysiology of the respiratory system.
p. Identify indications for pleural decompression.
q. Discuss methods for pleural decompression assessment.
r. Describe the procedure for pleural decompression.
s. Differentiate between normal and abnormal assessment findings.
t. Identify transport complications associated with pleural decompression.
u. Identify indications and purpose for chest tubes.
v. Discuss methods for chest tube assessment and management.
w. Differentiate between normal and abnormal assessment findings.
x. Describe the procedure for chest tube placement.
y. Identify transport complications for chest tubes.
z. Identify indications and purpose for transport ventilators.
aa. Discuss modes and methods of ventilation on transport ventilators. bb. Identify the appropriate settings for patients on transport ventilators.
cc. Discuss methods of ventilator assessment and management. dd. Differentiate between normal and abnormal assessment findings. ee. Describe the procedure for placing a patient on a transport ventilator. ff. Identify transport complications of transport ventilators. gg. Identify indications for ET tube and tracheal suctioning. hh. Describe the procedure for ET tube and tracheal suctioning. ii. Identify complications of ET tube and tracheal suctioning. jj. Identify indications and purpose for rapid sequence induction (RSI). kk. Identify pharmacologic agents utilized in RSI.
ll. Describe why sedative medications should usually accompany the use of paralytic agents. mm. Outline the technique for RSI. nn. Identify transport considerations for patients intubated with the RSI technique.
oo. Identify indications and purposes for a tracheostomy. pp. Identify criteria for tracheostomy assessment. qq. Differentiate between normal and abnormal assessment findings rr. Describe the procedure for tracheostomy placement.
ss. Identify transport complications of tracheostomies. tt. Identify indications and purpose for needle cricothyrotomy.
uu. Identify criteria for needle cricothyrotomy assessment vv. Describe the procedure for needle cricothyrotomy. ww. Differentiate between normal and abnormal assessment findings.
xx. Identify transport complications for needle cricothyrotomy. yy. Identify indications and purpose for surgical cricothyrotomy.
zz. Identify criteria for surgical cricothyrotomy assessment aaa. Describe the procedure for surgical cricothyrotomy. bbb. Differentiate between normal and abnormal assessment findings. ccc. Identify transport complications for surgical cricothyrotomy.

ddd. Discuss the indications and purpose for retrograde intubation.
eee. Identify criteria for retrograde intubation. fff. Describe the procedure for retrograde intubation. ggg. Differentiate between normal and abnormal assessment findings. hhh. Identify transport complications for retrograde intubation.

5. Apply a complex understanding of Cardiovascular Diseases and Hemodynamic Monitoring.

a. Discuss the systems based approach to performing a cardiac assessment.
b. Assess cardiac perfusion.
c. Differentiate between normal and abnormal heart tones.
d. Review cardiac physiology and pathophysiology.
e. Identify how to calculate mean arterial pressure.
f. Describe the difference between monitoring and assessing a patient using an ECG machine
g. Demonstrate proper lead placement for a 12 Lead ECG
h. Using a simple chart and leads I, II and III, determine the electrical axis and the presence of fascicular blocks (hemiblocks)
i. Using lead V_1(MCL_1), determine bundle branch blocks
j. Describe the clinical significance of hemiblocks and bundle branch blocks in the cardiac patient
k. Describe the strategy for identifying Ventricular Tachycardia in wide complex tachycardia
l. On a 12-Lead or Multi-Lead ECG, identify ST and T wave changes relative to myocardial ischemia, injury and infarction.
m. Describe a systematic "assessment" of a 12-Lead ECG
n. Describe possible complications of various infarct locations
o. Discuss the incidence of sudden cardiac death and the population at risk
p. Describe how and Implantable Cardioverter Defibrillator (ICD) works, its components and its functions
q. Identify the potential complications associated with the ICD and location of placement in the chest wall
r. Describe the procedure for deactivating an ICD with a magnet
s. Understand the basic concepts underlying cardiac pacemaker technology
t. Understand the current code system used for cardiac pacing
u. Understand and troubleshoot the potential rhythms that indicate forms of pacemaker malfunctions
v. Identify indications for Intra-Aortic Balloon Pumps (IABP)
w. Define the primary physiological effects achieved by the inflation and deflation of the IABP.
x. Describe the set up and operation of an IABP
y. Discuss the hemodynamic effects of proper balloon inflation and deflation
z. Identify the factors that affect diastolic augmentation and appropriate troubleshooting considerations
aa. Identify proper timing and appropriate corrective action bb. Identify transport complications of IABP

cc. Discuss the physiologic and hemodynamic concepts related to assessing and managing patients with Left Ventricular Assist Devices.

dd. Differentiate between types of invasive lines ee. Identify indications for invasive lines

ff. Identify techniques for placement of radial arterial lines including anchoring techniques.

gg. Discuss methods for assessing and managing invasive lines hh. Differentiate between normal and abnormal assessment findings

ii. Identify transport complications of invasive lines

jj. Define: preload, afterload, contractility, systemic vascular resistance, cardiac output, cardiac index

kk. Identify hemodynamic monitor controls ll. Interpret hemodynamic readings

mm. Identify alarm indications

nn. Discuss alarm troubleshooting procedures oo. Identify transport complications of hemodynamic monitors pp. List two purposes for invasive hemodynamic monitoring

qq. Identify the function of each component of a PA catheter including: length markings, balloon inflation port, thermistor port, PA distal port, RA proximal port, auxiliary RA port rr. List normal hemodynamic pressures and identify normal pressure waveforms for the RA, RV, PA, PCWP, LA and peripheral arterial sites ss. Interpret Systemic Venous Oxygen monitoring data and discuss appropriate therapeutic modalities to treat abnormal values tt. Discuss indications of measuring cardiac output and cardiac index uu. Describe problems commonly encountered in measuring PA pressures and state appropriate interventions

vv. List potential complications associated with PA insertion

6. Apply Complex of Neurological injuries and Diseases as it relates to critical care transport.
   a. Discuss the systems based approach to performing a neurological assessment.
   b. Describe the major components of a neurological examination.
   c. Describe the differences in the neurological assessment between a brain injured or spinal injured patient. d. Perform a neurological examination.
   e. Describe the findings of a normal and abnormal neurological examination.
   f. Describe vital signs changes noted with neurological injuries.
   g. Identify transportation considerations for patients with neurological injuries.
   h. Review the physiology and pathophysiology of the neurological system.
   i. Describe intracranial pressure (ICP)
   j. Describe the pathophysiology of ICP
   k. Define compliance
   l. Explain herniation of the brain
   m. Describe how to calculate cerebral perfusion pressure (CPP)
   n. Identify signs and symptoms of increasing ICP
   o. Identify factors that will increase ICP
   p. Identify consequences of increased ICP on patient outcome
   q. Identify strategies and methods for decreasing ICP during critical care transport
   r. Describe the reasons for ICP monitoring
   s. Differentiate between normal and abnormal findings with ICP monitoring
   t. Describe the advantages, disadvantages, and transport considerations for the following ICP monitoring devices:
   u. Intraventricular catheter
   v. Epidural catheter
   w. Subdural/ subarachnoid monitoring devices
   x. Fiber optic transducer tipped probe
   y. Describe ICP waveform
   z. Explain therapies to manage ICP

7. Apply complex understanding of Gastrointestinal (GI), Genitourinary (GU), and Renal Diseases as it relates to critical care transport.
   a. Discuss the systems based approach to performing a GI, GU and Renal assessment.
   b. Identify GI/GU assessment criteria.
   c. Differentiate between normal and abnormal assessment findings.
   d. Review the physiology and pathophysiology of the GI, GU and Renal systems.
   e. Identify the indications for a nasogastric and orogastric tube
   f. Discuss methods for nasogastric and orogastric assessment
   g. Differentiate between normal and abnormal assessment findings
   h. Describe procedure for placement of nasogastric and orogastric tubes
   i. Identify transport complications associated with nasogastric and orogastric tubes.
   j. Identify indications and purpose for Foley catheters
   k. Discuss assessment methods for Foley catheters
   l. Differentiate between normal and abnormal assessment findings

m. Describe procedure for Foley catheter placement
n. Identify transport complications for Foley catheters
o. Identify conditions where Foley catheter insertion would be contraindicated.
p. Identify indications for an ostomy
q. Discuss methods for ostomy assessment
r. Differentiate between normal and abnormal assessment findings
s. Discuss methods for ostomy placement
t. Identify transport complications for ostomies
u. Identify indications and purpose for dialysis
v. Differentiate between hemodialysis and peritoneal dialysis
w. Describe the procedure for accessing arteriovenous shunts
x. Identify transport complications of dialysis patients
y. Describe the rectal anatomy and structures
z. Classify rectal bleeding: red, bright red, melena aa. Discuss incontinence, diarrhea and constipation management techniques bb. Demonstrate rectal temperature assessment technique cc. Describe decubitus ulcers

8. Apply complex understanding of multisystem Organ Dysfunction and Shock Syndromes. a. Define shock.
b. Discuss the major pathophysiologies of shock.
c. Describe how assessment techniques can help identify shock.
d. Describe the general management principles for the patient in shock.
e. Describe pharmacological intervention in different types of shock.
f. Define multisystem organ failure.
g. List the history, signs, and symptoms of the patient with sepsis.
h. Describe the management of the patient with sepsis.
i. List the history, signs, and symptoms of the patient with acute respiratory distress syndrome (ARDS).
j. Describe the management of the patient with ARDS.
k. List the history, signs, and symptoms of the patient with disseminated intravascular coagulation (DIC).
l. Describe the management of the patient with DIC.
m. Describe proper infection control procedures that the Critical Care Transport Paramedic should take when treating patients.
n. Identify the mode of transmission and precautions to follow when treating a patient with the following infectious diseases:
    1. HIV
    2. Hepatitis
    3. Multiple-Antibiotic Resistant Bacteria
    4. Tuberculosis
    5. Meningitis

9. *Apply complex understanding of laboratory data interpretation as it relates to critical care transport.*
a. Describe the relationship between laboratory medicine and the diagnosis and treatment of patients.
b. Describe the common problems associated with specimen collection and ways to avoid these problems.
c. Identify mean lab values and deviations for the complete blood count, the differential blood count, and platelet values.
d. Interpret arterial blood gas data.
e. Interpret chemistry studies.
f. Interpret urinalysis.
g. Describe the purpose of culture and sensitivity tests.
h. Interpret miscellaneous lab studies.

10. Apply an understanding of Special Patient Populations as it relates to critical care transport**.**
a. Discuss the systems based approach to performing a thorough assessment in the pediatric patient.

b. Identify various histories and general principles for pediatric assessment
c. Define the primary cause of cardiac arrest and list several risk factors
d. Discuss the emergent care of a newborn patient.
e. Discuss the emergent care of a neonatal patient including genetic, cardiovascular, respiratory, and other disease processes.
f. Describe principles of general treatment before and during the transport of a pediatric patient
g. Describe the pathology and physiology of diseases specific to the pediatric population.

h. Discuss the systems based approach to performing a thorough assessment of the gynecological and obstetrical patient.
i. Identify various histories and general principles for Obstetrical & Gynecological (OB/GYN)Assessment
j. Define the primary cause of cardiac arrest and list several risk factors
k. Describe principles of general treatment before and during the transport of a OB/GYN patient
l. Describe the pathology and physiology of diseases specific to gynecological and obstetrical patient.
m. Discuss the systems based approach to performing a thorough assessment of the burn patient.
n. Discuss burn assessment criteria and how to score the burn in terms of total body percentage
o. Discuss hemodynamic assessment criteria associated with burn related injuries and their effect on body system functions to include potential complications
p. Describe the criteria to determine the degree of burns
q. Discuss the management of burn injures to include wound, airway, and pain management
r. Describe burn wound treatment protocols and products based on the latest criteria established for burn management
s. Discuss the various types of burn related injures sorted by mechanism of injury (chemical, thermal, electrical, and radiation) and the associated first response, triage, and treatment
t. Describe the pathology and physiology of diseases specific to the burn patient.

Course Number and Name: **EMS 2622** **Critical Care Paramedic Lab**

Description: The student must demonstrate competency using high fidelity simulation. Final lab competency should be demonstrated using human cadaver or high fidelity simulation.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Clinical	Contact Hours
2	0	4	0	60

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Demonstrate the ability to perform the psychomotor skills required during critical care transport.
2. Demonstrate how to manage complex airways including surgical airways.
3. Demonstrate how to manage complex respiratory emergencies including the initiation and management of ventilator.
4. Demonstrate ability to place and manage tube thoracotomy
5. Demonstrate the ability to insert, anchor, assess, access, manage and monitor arterial lines
6. Demonstrate the ability to insert, anchor, assess, access, manage, and monitor central venous catheters using ultrasound guided technique.
7. Demonstrate the ability to assess, access, manage and monitor hemodynamic lines 8. Demonstrate the ability to successfully identify the need for and perform surgical escharotomy.
9. Demonstrate the ability to place a Foley Catheter in male and female patients.
10. Demonstrate the ability to manage complex patient through high fidelity simulation of medical and trauma scenarios.

Course Number and Name: **EMS 2632** **Critical Care Paramedic Practicum**

Description: The Critical Care Practicum course is centered on competency based performance and the completion of a minimum of 90 hours of clinical rotations. Students must successfully complete the defined competencies in order to complete the requirements of the Critical Care Practicum course. In many cases the competencies required will take more time than is allotted during the clinical rotations. In this case, students will be required to complete enough clinical time to successfully document completion of all required competencies. Competencies should be completed on human subjects. This can be accomplished on live human subjects or during a cadaver lab. High fidelity simulation plays an important role in the hands on education and should be incorporated as part of the laboratory component of the critical care course work. In some instances, high-fidelity simulation may be used to supplement competency procedures performed on human subjects.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Clinical	Contact Hours
2	0	0	12	108

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Apply their didactic knowledge and psychomotor competencies acquired during the lecture and laboratory courses to the treatment of live patients in critical care setting.
2. Demonstrate the ability to perform all skills in the critical care setting.
3. Demonstrate a comprehensive affective, cognitive and psychomotor understanding of patient care delivery while working in the critical care setting.

4.

ADVANCED EMERGENCY MEDICAL TECHNICIAN COURSE DESCRIPTIONS

Course Number and Name: **EMS 1133** **Foundations of Paramedicine-Lecture & Lab**

Description: This course consists includes a comprehensive review of the knowledge base and skill set of the Emergency Medical Technician. History of EMS, Well-Being of the EMT, medical legal issues, communication and documentation will be expanded to the role of the paramedic. This course includes the theory related to intravenous/intraosseous access, medication administration, patient assessment, and introductory pharmacological calculations. It also includes a laboratory experience designed to give psychomotor experience to the theoretical concepts developed in the lecture.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Contact Hours
3	2	2	60

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Compare and contrast the roles of each nationally recognized certification level of EMS.
2. Identify and describe the requirements that must be met for paramedics to practice out-of- state.
3. Describe the role of the paramedic in health care, public health, and public safety.
4. Identify the desirable characteristics of paramedics.
5. Explain how paramedicine has made strides toward greater recognition as a profession
6. Describe the various roles in which paramedics may work.
7. Describe the out-of-hospital and in-hospital components of the EMS systems.
8. Explain how EMS systems work to respond to out of hospital calls.
9. Outline the history of EMS and its impact on the modern EMS system.
10. Describe each component of the EMS system and how it impacts the different systems of care.
11. Discuss the documents that are guiding the vision of EMS into the future.
12. Discuss the problems identified in the document “EMS: At the Crossroads”.
13. Define the various types of EMS systems operating in the US.
14. Describe the purposes of the national documents guiding EMS education and practice.
15. Discuss typical components of local and state-level EMS systems. 16. Explain the purpose and responsibilities of physician medical directors.
17. Give examples of on-line medical direction and off-line medical oversight.
18. Describe the purposes of professional organizations in EMS.
19. Recognize professional journals related to the practice of EMS.
20. Categorize receiving hospitals facilities by their capabilities.
21. Explain the purpose and components of an effective continuous quality improvement system. 22. Describe how you can contribute to greater patient safety in emergency medical services.
23. Explain the role of research in EMS.
24. Discuss each of the primary responsibilities of the paramedic.
25. Integrate expected characteristics of professionalism into all facets of the practice as a paramedic.
26. Give examples of behaviors that demonstrate the expected professional attitudes and attributes of paramedics.
27. Advocate for high standards of professionalism in EMS.
28. Recognize potential threats to safety and wellness in various scenarios.
29. Explain the importance of preventing EMS workforce injuries and illness.
30. Describe the role and elements of basic physical fitness in EMS workplace safety and wellness.
31. Explain the consequences of addictions and unhealthy habits.

32. Identify professional and compassionate expectations of the paramedic.
33. Discuss various patient, family, and EMS provider responses to death and dying.
34. Explain the pathophysiology of stress, including types of stressors and the phases of stress.
35. Identify effective stress management strategies.
36. Discuss the effects of shift work on the body and the ability to function effectively.
37. Explain the relationship between EMS research and EMS practice.
38. Compare and contrast different types of research paradigms.
39. Give examples of various experimental designs and discuss how to determine the level of validity.
40. Describe the role of published research reports in EMS practice.
41. Recognize the three categories of public health law.
42. Describe the legal, ethical, and moral obligations of the paramedic.
43. Identify the four primary sources of law.
44. Differentiate between civil law and criminal law.
45. Explain the concept of tort law as it applies to paramedic practice.
46. Outline the events that occur in a civil lawsuit.
47. Identify and discuss common legal regulations that pertain to the practice of paramedics.
48. Describe the paramedic's protection against a claim of negligence.
49. Avoid written or spoken statements that could lead to a claim of defamation.
50. Discuss how to avoid claims of abandonment, assault, battery, false imprisonment, and excessive force.
51. Synthesize the concepts related to consent in the competent and incompetent patient across all ages of the life span.
52. Take measures to protect patient's confidentiality and privacy and comply with HIPPA.
53. Explain the basic concepts of epidemiology.
54. Give examples of how EMS providers can be involved in injury prevention.
55. Discuss situations involving advance directives, organ donation, and withholding or terminating resuscitation.
56. Describe the relationship between ethics, morals, laws, and religion and describe the different approaches to ethical decision making.
57. Apply the six rights of medication administration when administering patient medications.
58. Identify the boundaries of the scope of practice pertaining to medication administration.
59. Identify situations in which you should communicate directly with medical direction regarding drug administration.
60. Discuss principles of medical asepsis in the administration of medications.
61. Accurately and completely document the pertinent details of administering medication to a patient.
62. Identify the precautions, risks, equipment, and advantages/disadvantages for each route of med administration.
63. Discuss how to safely administer medications by all routes.
64. Identify how to prepare medications for administration from common types of drug packaging found in EMS.
65. Describe the indications, contraindications, procedure, equipment, and risks associated with IV access.
66. Describe devices used for peripheral venous access.
67. Describe the characteristics of intravenous fluids, including colloids, crystalloids, and O2 carrying solutions.
68. Describe the components of scene size up and identify potential hazards experienced during various EMS calls.
69. Describe the concepts of using therapeutic communication during a patient encounter.
70. Synthesize and explain the components of the primary assessment.
71. Synthesize and explain the components of history gathering.
72. Describe and adapt the various assessment techniques needed to perform the primary assessment.
73. Describe and adapt the assessment techniques to the ongoing exam.
74. Adapt the physical exam to patients of all ages.
75. Perform body substance isolation procedures as needed for calls.
76. Perform components of scene size up.

77. Identify how to recognize and manage hazards for the safety of crew and patient.
78. Perform primary assessment to include initial impression, mental status and finding chief complaint.
79. Demonstrate the use of mnemonic AVPU.
80. Perform airway, breathing and circulation assessment.
81. Identify priority conditions for patient transport using scene size up and primary assessment.
82. Obtain patient history from family, caregivers or bystanders.
83. Indicate communication techniques for patient interaction.
84. Demonstrate hospital reports to identify the patient and their condition and treatment.
85. Adapt reassuring measures when dealing with patient and family members.
86. Apply the techniques of inspection, palpation, percussion and auscultation to the patient assessment.
87. Measure, interpret and record vital signs.
88. Demonstrate aseptic techniques for IV therapy and medication administration.
89. Demonstrate intravenous therapy to include selecting and checking equipment, spiking bag and performing venipuncture.
90. Identify untoward effects that occur during or after venipuncture and intraosseous.
91. Administer medication by IV bolus and IV piggyback procedures.
92. Administer medications by intramuscular, intranasal and subcutaneous routes as directed by need.
93. Perform intraosseous puncture in appropriate sites.
94. Perform blood glucose testing.
95. Calculate drug dosages for various routes of medication.
96. Convert pounds to kilograms for use in medication administration. 97. Calculate intravenous infusion rates.

Course Number and Name: **EMS 1213** **Concepts of Airway and Respiratory Medicine-Lecture & Lab**

Description: This course integrates complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patient airway, adequate mechanical ventilation, and respiration for patients of all ages. This course also includes a lab that will integrate comprehensive knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of ensuring a patent airway, adequate mechanical ventilation, and respirations for patients of all ages.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Contact Hours
3	2	2	60

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Integrate patient assessment findings, patient history, and knowledge of anatomy, physiology, pathophysiology, and basic and advanced life support interventions to recognize and manage patients with pulmonary disorders.
    a. Define key medical terms as they relate to the respiratory system and pulmonary disorders.
    b. Identify risk factors associated with pulmonary disease.
    c. Review the anatomy and physiology of the pulmonary system.
    d. Discuss pathophysiological changes that contribute to the disruption of ventilation, diffusion, and perfusion in the pulmonary system
    e. Integrate all components of patient assessment and monitoring devices to form field impressions and differentials for pulmonary patients.
    f. Identify signs and symptoms of airway compromise, respiratory distress, and respiratory failure.
    g. Discuss pathophysiology of common pre-hospital respiratory disorders.
    h. Discuss the pharmacology of common pulmonary and airway management medications used in the pre-hospital environment.
2. Apply principles of basic and advanced airway management and ventilation techniques to the assessment findings and management plans of patients in the pre-hospital setting.
    a. Define key medical terms as they relate to airway management and ventilation.
    b. Discuss anatomy, physiology, and pathophysiology of the upper and lower airways as it relates to the respiratory cycle, gas exchange and transport.
    c. Identify the clinical differences between the adult and pediatric airway.
    d. Describe signs and symptoms of common airway emergencies.
    e. Discuss the steps of the primary survey as it relates to airway patency and adequate ventilation.
    f. Identify types, indications, contraindications, procedure for use and limitations of different basic and advanced airway devices including extraglotic and endotracheal airways.
    g. Identify multiple ways to confirm adequate ventilation regardless of device.
    h. Discuss management of post-intubation agitation and field extubation.
    i. Describe the pharmacology of medications and the procedures commonly used in medication assisted intubation.
    j. Recognize predictors of a difficulty airway and techniques for improving intubation success.
    k. Discuss the assessment and airway management of the patient with a stoma.
    l. Discuss proper suctioning techniques to include the nasopharynx, oropharynx and trachea of the intubated patient.
    m. Discuss the benefits of gastric decompression, to include equipment and procedure.
    n. Identify the role and function of transport ventilators.
    o. Describe the function, procedure of use, and benefits of noninvasive respiratory gas monitoring to identify adequate oxygenation and ventilation.

p. Explain the need for critical thinking techniques when considering the difficult airway.
q. Discuss optical and video laryngoscope options.
r. Identify alternative approach to traditional endotracheal intubation, including nasal intubation, retrograde intubation, digital intubation and lighted stylet techniques.
s. Discuss special considerations of anatomy, equipment, and procedure for the intubation of pediatric patients.

3. Apply principles of basic and advanced airway management and ventilation techniques to the assessment findings and management plans of patients in the pre-hospital setting.
    a. Demonstrate techniques of basic airway management, including positioning, administering supplemental oxygen, manual airway maneuvers, inserting basic airway adjuncts, and suctioning techniques.
    b. Demonstrate techniques of advanced airway management, including endotracheal intubation to include nasal, retrograde, digital and lighted stylet techniques.
    c. Demonstrate techniques of advanced airway management to include extraglotic airway devices.
    d. Demonstrate techniques for advanced airway management, including cricothyrotomy and medication assisted intubation.

Course Number and Name: **EMS 1325** **Concepts of Cardiovascular Medicine-Lecture & Lab**

Description: This course consists of the theory, anatomy, physiology, pathophysiology and treatments associated with the conditions of the cardiovascular system. This includes the theory of introductory, advanced, and multi-lead electrocardiogram interpretation. Changes in the lifespan will also be included. It is also a laboratory experience designed to give psychomotor experience to the theoretical concepts developed in the lecture.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Contact Hours
5	3	4	105

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Explain the role of EMS in the 'chain of survival' from cardiac arrest.
2. Describe the significance of cardiovascular disease and its prevalence in the United States.
3. Define both modifiable and non-modifiable risk factors for cardiovascular disease.
4. Compare and contrast the normal anatomy and physiology of the cardiovascular system versus the abnormal dysrhythmias and the pathophysiology of cardiovascular disorders.
5. Explain the purpose and the process of electrocardiographic monitoring.
6. Analyze the waves and intervals of an ECG tracing to the electrical activity of the heart.
7. Summarize the significance of changes in ECG tracings from expected normal findings.
8. Explain the general mechanisms of cardiac dysrhythmias.
9. Apply a systematic approach to identify specific ECG dysrhythmias.
10. Define the causes of cardiac dysrhythmias.
11. Relate the clinical significance of specific cardiac dysrhythmias with a hemodynamic compromise.
12. Hypothesize the treatments generally proposed for specific cardiac dysrhythmias.
13. Justify the importance of ALS interventions in the pre-hospital management of patients with cardiac disorders to include the types of *acute coronary syndromes* (unstable angina, ST elevation myocardial infarction and non-ST elevation myocardial infarction).
14. Compare, contrast the differences in BLS and ALS assessment and management of cardiac arrest.
15. Recall and list the causes of 'chest pain'.
16. Describe the pathophysiology of specific cardiovascular diseases encountered in the pre-hospital environment.
17. Arrange the sequence of steps when assessing the patient with cardiac or vascular complaints.
18. Describe the diagnostic procedures used in the evaluation of myocardial infarctions, to include 12-lead electrocardiograms and laboratory analysis of blood markers.
19. Justify the reason for reperfusion therapy as well as pharmacologic agents used in the management of myocardial infarctions.
20. Employ post-resuscitation care of cardiac arrest patients who achieve a 'return of spontaneous circulation' (ROSC).
21. Defend considerations in withholding, and/or terminating resuscitation efforts in the pre-hospital environment.
22. Show and justify the process and purpose of acquiring a 12-lead electrocardiogram on a patient with cardiovascular compromise.
23. Interpret the findings of a 12-lead electrocardiogram.
24. Identify signs and symptoms associated with acute coronary syndromes (ACS) in a variety of 12-lead and 15-lead ECGs.

25. The student will learn the psychomotor and affective learning domains necessary to apply the topics covered in the co-requisite lecture course.
26. Reorganize or modify the assessment to meet the needs of a patient with a cardiac or vascular disorder.
27. Synthesize a process of clinical reasoning to guide the management of a patient with a cardiac or vascular disorder.
28. Develop a critical-thinking approach to evaluate patients for specific cardiac and vascular disorders. Be able to quickly adapt to austere conditions with an unstable cardiovascular patient.
29. Formulate treatment plans for patients with cardiac and vascular disorders throughout a variety of different cardiac and vascular lab scenarios.
30. Select the appropriate function on the cardiac monitor based on the type of cardiovascular emergency, to include 4-lead and multi-lead monitoring, waveform capnography, pulse oximetry, the use of transcutaneous pacing and synchronized versus unsynchronized cardioversion.
31. Recognize the need for using the cardiac monitor to identify certain cardiac conditions to include chamber enlargement, axis deviation and conduction disorders.
32. Use the cardiac monitor to identify certain electrolyte disturbances. Be able to defend the use of isotonic crystalloids or pharmacologic interventions in the treatment of electrolyte imbalances.

Course Number and Name: **EMS 1514** **Practicum I**

Description: Using supervised rotations in a definitive care setting, the students will apply the concepts developed in the didactic and laboratory courses to live patients. This will include, but not be limited to rotations in the emergency department, ICU, OR, respiratory therapy, and pediatrics.

Hour Breakdown:

Semester Credit Hours	Lecture	Clinical	Contact Hours
4	0	12	180

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Demonstrate professional behavior.
    a. Perform behaviors within the integrity of the profession.
    b. Perform the following behaviors with empathy as related to the profession:
        - Self-motivation
        - Appearance and personal hygiene
        - Self-confidence
        - Communication
        - Time management
        - Team work with diplomacy
        - Respect
        - Patient advocacy Careful delivery of service
2. Integration of EMT skills.
    a. Measure, interpret, and record vital signs.
    b. Perform patient assessment.
    c. Perform spinal immobilization.
    d. Utilize infection control techniques.
    e. Perform splinting.
    f. Perform airway placement.
    g. Perform suctioning.
    h. Perform patient handling/lifting.
    i. Perform hemorrhage control.
    j. Perform oxygen administration.
    k. Perform documentation.
    l. Transmit radio report.
    m. Perform CPR.
3. Integration of limited paramedic skills.
    a. Perform airway procedures.
    b. Perform comprehensive patient assessment.
    c. Perform vascular access, fluid administration, and blood draw
    d. Administer medication

Course Number and Name: **EMS 1913** **Fundamentals of Advanced EMT -Lecture and Clinical**

Description: This course is required to apply for certification as an Advanced Emergency Medical Technician (AEMT). This course introduces the theory and application of concepts related to the profession of the AEMT. The primary focus of the AEMT is to provide basic and limited advanced emergency medical care and transportation for critical and emergent patients across the lifespan who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Topics include: extending the knowledge of the EMT to a more complex breadth and depth, intravenous access and fluid therapy, medication administration, blind insertion airway devices, as well as the advanced assessment and management of various medical illnesses and traumatic injuries. This course is based on the NHTSA National Emergency Medical Services Education Standards. Requires licensure or eligibility for licensure at the AEMT level and the EMS course sequence listed before eligibility to test NREMT AEMT exam is granted.

Hour Breakdown:

Semester Credit Hours	Lecture	Clinical	Contact Hours
3	2	1	75

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Discuss factors that affect the AEMT while performing a patient assessment.
2. Describe major components of assessing and managing patients with specified medical conditions across the lifespan
3. Discuss the assessment and management of patients experiencing the following medical emergencies or conditions:
    - Stroke/TIA
    - Seizures
    - Headache
    - Abdominal and gastrointestinal disorders
    - Allergies/anaphylaxis
    - Infectious diseases
    - Diabetic emergencies
    - Psychiatric conditions
    - Cardiovascular emergencies
    - Toxicological emergencies
    - Respiratory emergencies
    - Sickle cell disease
    - Genitourinary/renal emergencies
    - Gynecological emergencies
    - Non-traumatic musculoskeletal disorders
4. Diseases of the eyes, ears, nose, and throat
5. Differentiate between the various types and categories of special population patients.
6. Discuss the assessment and management of the following special population patients:
    - Obstetrics patient
    - Neonatal patients
    - Pediatric patients
    - Geriatric patients
    - Patients with special challenges
7. Demonstrate Professional Behavior
8. Intergrate EMT skills. 9. Integrate Advanced EMT skills.

Course Number and Name: EMS 2211 Fundamentals of Advanced EMT -Practicum Clinical II

Description: Using supervised rotations in a definitive care setting, the students will apply the concepts developed in the didactic course to live patients in the out of hospital setting.

Hour Breakdown:

Semester Credit Hours	Lecture	Clinical	Contact Hours
1	0	1	45

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Demonstrate Professional Behavior
2. Intergrate EMT skills. 3. Integrate Advanced EMT skills.

Course Number and Name: **EMS 2312 Fundamentals of Advanced EMT -Lecture**

Description: This course is required to apply for certification as an Advanced Emergency Medical Technician (AEMT). This course introduces the theory and application of concepts related to the profession of the AEMT. The primary focus of the AEMT is to provide basic and limited advanced emergency medical care and transportation for critical and emergent patients across the lifespan who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Topics include: extending the knowledge of the EMT to a more complex breadth and depth, intravenous access and fluid therapy, medication administration, blind insertion airway devices, as well as the advanced assessment and management of various medical illnesses and traumatic injuries. This course is based on the NHTSA National Emergency Medical Services Education Standards. Requires licensure or eligibility for licensure at the AEMT level and the EMS course sequence listed before eligibility to test NREMT AEMT exam is granted.

Hour Breakdown:

Semester Credit Hours	Lecture	Clinical	Contact Hours
2	2	0	30

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Discuss factors that affect the AEMT while performing a patient assessment.
2. Describe major components of assessing and managing patients with specified medical conditions across the lifespan
3. Discuss the assessment and management of patients experiencing the following medical emergencies or conditions:
    - Stroke/TIA
    - Seizures
    - Headache
    - Abdominal and gastrointestinal disorders
    - Allergies/anaphylaxis
    - Infectious diseases
    - Diabetic emergencies
    - Psychiatric conditions
    - Cardiovascular emergencies
    - Toxicological emergencies
    - Respiratory emergencies
    - Sickle cell disease
    - Genitourinary/renal emergencies
    - Gynecological emergencies
    - Non-traumatic musculoskeletal disorders
4. Diseases of the eyes, ears, nose, and throat
5. Differentiate between the various types and categories of special population patients.
6. Discuss the assessment and management of the following special population patients:
    - Obstetrics patient
    - Neonatal patients
    - Pediatric patients
    - Geriatric patients
    - Patients with special challenges

Course Number and Name: **EMS 2715** **Concepts of Traumatic Medicine-Lecture & Lab**

Description: This course will develop the basis for the pathophysiology, identification, and treatment of traumatic emergencies including coverage of concepts related to trauma systems and shock management. These concepts will be examined in patients across the life span. It also includes the trauma laboratory experience is designed to give psychomotor experience to the theoretical concepts developed in the lecture.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Contact Hours
5	3	4	105

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Describe the epidemiology of trauma, which results in requests for emergency medical care.
2. Describe and apply the five-step public health model to injury prevention.
3. Describe the capabilities of the various levels of designated trauma centers.
4. Conduct trauma assessments in a variety of scenarios that result in categorization and prioritize of patients as critical, unstable, potentially unstable, or stable (CUPS system).
5. Discuss the role of time to definitive care in the outcomes of trauma patients.
6. Apply trauma triage criteria to identify patients who should be transported to a trauma center.
7. Describe the importance of an organized system of trauma care to reducing trauma morbidity and mortality, and how EMS can participate in injury prevention programs.
8. Describe the key actions and decisions paramedics must be aware of during each phase of trauma assessment.
9. Briefly discuss the steps of the primary assessment as it relates to traumatically injured patients.
10. Briefly discuss the steps of the secondary assessment as it relates to traumatically injured patients.
11. Briefly discuss the steps of the reassessment phase as it relates to traumatically injured patients.
12. Understand and be able to apply numeric scoring systems for traumatized patients.
13. Given a variety of trauma patient scenarios, identify signs and symptoms of injury.
14. Given a variety of trauma patient scenarios, discuss assessment-based decision making, including treatment and transport decisions.
15. Discuss the laws of inertia, energy conservation, force, and kinetic energy as they relate to kinetics of Blunt force and penetrating trauma.
16. Associate the application of energy to various body tissues with the biomechanical forces produced to predict injury patterns.
17. Describe the events that occur in motor vehicle impacts and identify potential injuries based on events.
18. Discuss the various vehicular restraints and safety mechanism.
19. Discuss the collision analysis to account for the characteristics of motorcycle and off road vehicle collisions.
20. Describe the forces that cause injuries in patients who have fallen and the criteria that constitute a severe fall.
21. Describe the mechanisms of blast injury, blast-injury patterns, and special blast-injury care considerations.
22. Discuss the phases of the blast injury to include common injury patterns in each phase.
23. Describe basic injury patterns and assessment considerations for an injured patient participating in various sporting event.
24. Describe the considerations for the cause and assessment of crush injuries and compartment syndrome.

25. Apply principles of ballistics to the prediction of injury patterns, to include special weapon types.
26. Associate the application of low-, medium-,and high-velocity penetrating mechanisms to various body tissues with the biomechanical forces produced to predict injury patterns.
27. Describe special concerns for EMS provider safety that are associated with penetrating trauma.
28. Reconstruct penetrating events to gain additional information that can help predict injury patterns.
29. Describe the special considerations in assessment and management of penetrating trauma to the face and chest, and of impaled objects.
30. Review the anatomy and basic physiology of the cardiovascular system and determinants of blood pressure.
31. Describe the characteristics and concerns associated with venous, arterial, and capillary bleeding.
32. Discuss the disruption of homeostasis that occurs due to hemorrhage and the body's compensatory mechanisms attempting to maintain homeostasis.
33. Describe the process of hemostasis and factors that can affect it.
34. Define internal and external hemorrhage and discuss appropriate progressive measures for managing it, to include tourniquets, TXA administration, and topical hemostatic agents.
35. Describe the pathophysiology and findings associated with the four classes of hemorrhage.
36. Describe the effects of hemorrhage on categories of special patients, such as pregnant women, athletes, obese patients, children, and the elderly.
37. Define and discuss the compensated, decompensated, and irreversible stages of shock.
38. Identify and discuss the phases of assessment as they relate to a patient suffering from blood loss.
39. Briefly describe the underlying pathophysiology of hypovolemic, distributive, neurogenic, obstructive, cardiogenic and respiratory causes of shock.
40. Demonstrate assessments that can identify patients with hemorrhage and shock.
41. Discuss the management of patients with hemorrhage and shock to include the use of oxygen, intravenous therapy, pharmacology, and temperature regulation.
42. Describe the epidemiology of soft tissue injuries.
43. Describe the anatomy and physiology of the skin and associated soft tissues.
44. Discuss the pathophysiology of open and closed soft tissue injuries.
45. Describe the process and phases of wound healing.
46. Discuss soft tissue injury complications, including infection, impaired hemostasis, delayed healing, compartment syndrome, scarring, pressure injuries, crush syndrome, and injection injuries.
47. Describe and differentiate between the use of different dressings and bandaging materials, in regards to soft tissue injuries.
48. Discuss the phases and process of assessment as they relate to the assessment and management of a patient with a soft tissue injury.
49. Reassess patients with soft tissue injuries for complications of bandaging.
50. Describe special considerations in the management of the injuries such as amputations, impalements, crush and compartment syndromes, and injuries to the face, neck, thorax, and abdomen.
51. Describe considerations in decisions to transport or treat and release patients with soft tissue injuries.
52. Describe the epidemiology of burn injuries.
53. Describe the anatomy and physiology of the skin.
54. Describe the basic pathophysiology of thermal, electrical, chemical, radiation, and inhalation burns.
55. Identify basic assessment principles for burn injuries, including the determination of burn depth and extent of body surface area involved, including superficial, partial thickness and full thickness.
56. Discuss the systemic complications of burns and how these may be managed.
57. Identify and describe the phases of patient assessment for a patient with a burn injury.
58. Prioritize burns that are considered minor, moderate, and critical.
59. Develop management plans for patients with burns resulting from thermal, inhalation, electrical, chemical, and radiation burn mechanisms.
60. Identify the epidemiology of injuries to the head, neck, and spinal column.

61. Describe the anatomy and physiology of the head and face, neck, and spinal column.
62. Describe the various mechanisms of injury that could cause trauma to the head, neck, and spinal cord.
63. Identify and describe the various types of brain injuries that can occur after trauma.
64. Discuss intracranial pressure, auto-regulation, and the detrimental effects of increasing pressure on the brain in the adult and pediatric patient.
65. Identify the types and describe the pathophysiology of syndromes associated with spinal cord trauma.
66. Identify and discuss the types of injuries to the head, face, and neck.
67. Identify the steps and discuss the procedure for performing a comprehensive assessment of patients with head, face, neck, and spinal column injuries.
68. Develop treatment plans for patients with injuries to the head, face, neck, and spinal column
69. Discuss the epidemiology of chest trauma.
70. Describe the anatomy and physiology of the thorax.
71. Identify how blunt and penetrating mechanisms can result in thoracic trauma.
72. List and describe common pulmonary and chest wall injuries in the pre-hospital environment.
73. List and describe common cardiac and vascular injuries that may occur secondary to thoracic trauma.
74. Identify the phases and the steps of assessment for patients that have suffered chest wall trauma and present with various injuries.
75. Given a variety of scenarios, discuss the management of patients with thoracic injuries.
76. Discuss the epidemiology and trends observed in abdominal and pelvic trauma.
77. Describe the anatomy and physiology of the abdominal cavity and its contents.
78. Identify how blunt and penetrating mechanisms of injury can result in abdominal and pelvic trauma.
79. Discuss the pathophysiology of abdominal trauma pertaining to hollow, solid, and vascular injury patterns.
80. Identify the stages and discuss the steps necessary for assessment of patients with injuries sustained from trauma to the abdomen and pelvis.
81. Develop a management plan for patients with abdominal and pelvic injuries.
82. Discuss the basic epidemiology of orthopedic trauma.
83. Describe considerations in preventing orthopedic injuries.
84. Describe the anatomy and physiology of the musculoskeletal system.
85. Describe the pathophysiology of injuries as they occur to muscles, joints, and bones.
86. Describe special considerations in pediatric, geriatric, and sports-related orthopedic injuries.
86. Identify the phases of orthopedic injuries and discuss the steps of assessment for orthopedic injuries.
87. Discuss the types of and indications for, splinting equipment.
88. Identify and discuss any specific management for specific types of injuries such as pelvic, femur, knee, tibia/fibula, ankle, foot, shoulder, humerus, elbow, radius/ulna, wrist, and hand.
89. Identify and discuss the proper pre-hospital management of patients with musculoskeletal injuries.
90. Identify factors that place patients at particular risk for environmental emergencies.
91. Describe the homeostasis of body temperature, including discussion of the following:
    a. Mechanisms of heat loss and heat production
    b. Physiology of thermoregulation
    c. Factors that can interfere with thermoregulation
92. Describe the pathophysiology of heat-related illnesses and cold related disorders 93. Assess and manage patients with heat-related illnesses and cold related disorders.
94. Discuss measures to prevent heat-related and cold-related disorders.
95. Describe the pathophysiology of drowning.
96. Assess and manage patients who have drowned.
97. Describe the pathophysiology of diving emergencies, including the application of gas laws.
98. Assess and manage patients with diving injuries, including the following:
    - Surface injuries
    - Descent injuries
    - Bottom injuries

- Ascent injuries

99. Describe the pathophysiology of high-altitude illness. 100.Discuss ways to prevent high-altitude illness.
101. Assess and manage patients with high-altitude illnesses.
102.Describe the importance of recognizing, preventing, and treating hypothermia in trauma patients.
103.Describe the differences in anatomy, physiology, pathophysiology, assessment, and management of special population patients.
104 Discuss the paramedic's role while interacting with other EMS and ED health care providers as it relates to traumatized patients.
105 Identify the purpose and describe the use of air medical transport in the traumatized patient. 106. Demonstrate psychomotor and affective skills necessary to apply the topics covered in the co-requisite lecture course.
107. Recognize, categorize and apply treatment in traumatically injured patients to include the following:

- Critical
- Unstable
- Potentially unstable
- Stable

Course Number and Name: **EMS 2912** **Concepts of EMS Operations**

Description: Knowledge of operational roles and responsibilities to ensure safe patient, public, and personnel safety.

Hour Breakdown:

Semester Credit Hours	Lecture	Lab	Contact Hours
2	2	0	30

Prerequisite: Instructor Approved

Student Learning Outcomes:

1. Practice work habits that minimize the risk of back injuries.
2. Take appropriate actions to avoid destroying evidence at potential crime scenes.
3. Describe the benefit of effective EMS system communication to patient care.
4. Discuss anticipated future trends in EMS system communication.
5. Explain how the basic communication model applies to EMS communications.
6. Describe the responsibilities of EMS dispatchers.
7. Describe effective communication skills with dispatch, medical direction, and hospital staff.
8. Describe typical equipment, frequencies, and the advantages of EMS communications.
9. Explain the purpose of the National EMS Information System (NEMSIS).
10. Explain the importance of spelling, terminology use, abbreviations, and acronyms in documentation.
11. Discuss the importance of accurate documentation of times and radio communications.
12. Describe the administrative rules and regulations on the design of ambulances.
13. Identify the types of ambulance design according to the General Services
14. Administration specs.
15. Describe the roles of the CAAS and the ACS Committee on Trauma.
16. Describe the role and responsibilities of the paramedic in checking the ambulance.
17. Describe considerations in ambulance deployment and staffing configurations.
18. Describe the intent of the KKK-A-1822 Federal Specifications for Ambulances.
19. Discuss the significance of ambulance collisions.
20. Identify strategies for reducing the risk of ambulance collisions and associated death and injury.
21. Describe the use of helicopters and fixed wing aircraft in the care of ill or injured patients.
22. Discuss the evolution of air medical transport.
23. Describe the characteristics and capabilities of fixed-wing and rotor-wing aircraft.
24. Analyze situations that can result in low-impact, high-impact, and disaster-related MCIs.
25. Describe the origins and purposes of incident command or incident management systems.
26. Describe the components of the National Incident Management System (NIMS).
27. Describe the roles of various personnel within each of the five functional areas of NIMS/ICS.
28. Describe and apply a system of triage to MCIs.
29. Discuss various functions expected of EMS personnel in the triage, treatment, and transport of an MCI.
30. Describe special considerations in the response and operating procedures in disasters.
31. Describe the importance of preplanning, drills, and critiques with regard to MCI response
32. Describe the concept of rescue awareness training with respect to the role of the paramedic in rescue situations.

33. Describe the protective equipment needed by rescue and EMS personnel for a variety of rescues.

34. Describe equipment and measures used to protect patients in rescue situations. 35. Describe considerations in safety procedures in the approach to rescue situations.
36. Describe the principles and practices related to surface water rescues.
37. Describe the principles and practices related to hazardous atmosphere rescues.
38. Describe the principles and practices related to highway operations and vehicle rescues.

39. Describe the principles and practices related to hazardous terrain rescues. 40. Describe considerations for extended care of patients in rescue situations.
41. Discuss importance of toxicological, MCI, and terrorism in response to hazardous materials.
42. Describe the need for specialized training at various levels to effectively manage haz-mat situations.

43. Describe the various control zones established at a haz-mat release site.
44. Discuss how to protect the crew, and others from exposure to a haz-mat.
45. Discuss how EMS personnel monitor and rehab those responding to haz-mat.
46. Discuss the demographics of violence. 47. Recognize indicators of violence on a call.
48. Discuss how to avoid danger when responding to calls on the roadside or highway.
49. Discuss how to avoid the types of dangers you may encounter when responding to violent street events.
50. Describe safety concerns related to responding to clandestine drug laboratories

51. Describe the special problems faced by rural EMS systems.
52. Recognize the particular hazards and considerations involved in agricultural emergencies.

53. Anticipate injuries associated with various recreational activities.
54. Identify likely targets of terrorist attacks.
55. Identify information and observations that can indicate a potential terrorist attack when responding to calls.
56. Describe characteristics of explosive, incendiary, nuclear, chemical, and biological weapons.
57. Be aware of the likelihood of secondary explosions when responding to reports of an explosion.

58. Predict injury patterns and patient problems associated with explosions.
59. Describe the precautions in responding to a nuclear incident. 60. Describe the specific treatment for chemical agent exposures.
61. Describe the keys to recognizing a biological terrorist attack.
62. Describe actions to be taken by responders for protection when responding to a biological terrorist attack.

APPENDIX A: RECOMMENDED TOOLS AND EQUIPMENT

Capitalized Items

1. Anatomical Manikin w/removable organs (1 per program)
2. ACLS Training Manikin w/remote and recorder (1 per program)
3. Chair, stair (1 per program)
4. Cot, ambulance (1 per program)
5. Defibrillator, automated external, educational (1 per program)
6. ECG monitor, defibrillator, portable w/pacing, educational (1 per program)
7. Generator, arrhythmia (1 per program)
8. Heart model, external/internal (1 per program)
9. Intubation manikin, adult (1 per program)
10. Manikin, full body, CPR (1 per program)
11. Manikin, obstetrical (1 per program)
12. Manikin, trauma/burn, full body (1 per program)
13. Pulse oximeter [CO2 detector] (2 per program)
14. Radio transmitter/receiver, base station (1 per program)
15. Radio transmitter/receiver, 2-way portable (2 per program)
16. Skeleton, human (replica) (1 per program)
17. Ventilator, automatic transport (1 per program)
18. Pneumatic anti-shock garment (1 per program)
19. Computer w/monitor (1 per 4 students)
20. Printer, laser (1 per 2 computers)
21. Manikins, advanced (Adult, child, and neonate - code crisis manikins)
22. Quantitive CO2 monitor
23. 12-lead cardiac monitor/deffibulator with pacing
24. 12-lead simulator
25. IV pumps and poles
26. Neonatoal umbilical cannulation
27. Vascular access device
28. VAD needles
29. Naso/Oro gastric manikin
30. Cricoid manikin
31. CPAP/BiPAP
32. External jugular access device
33. Implanted ports/external and peripheral cath manikin
34. Multi-dooplex model (fetal and peripheral pulses)
35. Broselow pediatric resusitation system
36. Scalp-vein manikin
37. Multi-purpose manikins 38. T.V., color, 31 in.
39. High Fidelity Simulation manikin
40. Ultrasound

Non-Capitalized Items

1. Arm sling (1 per 2 students)
2. Bag-Valve-Mask device (1 per 2 students)
3. Blanket (1 per stretcher/cot)
4. Blood glucose monitor (1 per program)
5. Blood pressure cuff (4 per program)
6. Cervical collar (4 per program)
7. Containers, assorted medication

8. Cravats (1 per 2 students)
9. Cricothyrotomy device (1 per program)
10. FROPVD Flow Restricted Oxygen Powered Ventilation Device
11. ECG monitoring cables (2)
12. ECG electrodes (1 per program)
13. Esophogeal gastric tube airway (2)
14. Esophageal obturator airway (2)
15. Head immobilizer (CID) (1 per program)
16. Restriction/extrication device (1 per program)
17. Intraosseus infusion simulator (1 per program)
18. IV training arm and hand, adult (2 per program)
19. IV training arm, pediatric (2 per program)
20. Laryngoscope intubation kit (1 per program)
21. Spine back board (2)
22. Manikin, child, CPR (1 per program)
23. Manikin, infant, CPR (1 per program)
24. Manikin, intubation, infant (1 per program)
25. Manikin, pneumothorax emergency training (1 per program)
26. Moulage kit (1 per program)
27. Nasal cannula (5)
28. Nasopharyngeal airway (2)
29. Non-rebreather masks (5)
30. Oropharyngeal airway, various sizes
31. Oxygen cylinder (2)
32. Oxygen regulator and flowmeter (1 per program)
33. Pen light (1 per 2 students)
34. Pillows (6 per program)
35. Pocket mask w/1-way valve and O2 port (2 per program)
36. Scissors, trauma (4 per program)
37. Sheets, ambulance Cot (2 per program)
38. Short spine board (2 per program)
39. Simulator, cricothyrotomy (1 per program)
40. Simulator, intramuscular injection (1 per program)
41. Splint, air, various sizes
42. Splint, ladder (1 per program)
43. Splint, traction, sager-hare (2)
44. Stethoscope (1 per 2 students)
45. Stethoscope, dual head (1 per program)
46. Straps, various sizes
47. Stretcher, scoop (1 per program)
48. Suction device, portable (1 per program)
49. Syringes, various cc volumes
50. Venturi mask (1 per program)
51. Lighted styletts
52. Ear thermometer
53. Opthalmic diagnostic trainer
54. Otic simulator trainer
55. Naso & orgastric tubes

RECOMMENDED INSTRUCTIONAL AIDS

It is recommended that instructors have access to the following items:

1. Screen, projection (1 per program)
2. LCD projector (1 per program)
3. VCR/DVD (1 per program)
4. Computer table (1 per computer)
5. ELMO opaque projector

APPENDIX B: CURRICULUM DEFINITIONS AND TERMS

- Course Name – A common name that will be used by all community colleges in reporting students

- Course Abbreviation – A common abbreviation that will be used by all community and junior colleges in reporting students

- Classification – Courses may be classified as the following: ○ Career Certificate Required Course – A required course for all students completing a career certificate. ○ Technical Certificate Required Course – A required course for all students completing a technical certificate.
    - Technical Elective – Elective courses that are available for colleges to offer to students.

- Description – A short narrative that includes the major purpose(s) of the course

- Prerequisites – A listing of any courses that must be taken prior to or on enrollment in the course

- Co-requisites – A listing of courses that may be taken while enrolled in the course

- Student Learning Outcomes – A listing of the student outcomes (major concepts and performances) that will enable students to demonstrate mastery of these competencies

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75% of the time allocated to each course. The remaining 25% of each course should be developed at the local district level and may reflect the following:
    - Additional competencies and objectives within the course related to topics not found in the state framework, including activities related to specific needs of industries in the community college district
    - Activities that develop a higher level of mastery on the existing competencies and suggested objectives
    - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed or revised
    - Activities that include integration of academic and career–technical skills and course work, school-to-work transition activities, and articulation of secondary and postsecondary career–technical programs
    - Individualized learning activities, including work-site learning activities, to better prepare individuals in the courses for their chosen occupational areas

- Sequencing of the course within a program is left to the discretion of the local college. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors. Programs that offer an Associate of Applied Science Degree must include all of the required Career Certificate courses, Technical Certificate courses **AND** a minimum of 15 semester hours of General Education Core Courses. The courses in the General Education Core may be spaced out over the entire length of the program so that students complete some academic and Career Technical courses each semester. Each community college specifies the actual courses that are required to meet the General Education Core Requirements for the Associate of Applied Science Degree at their college.
- In order to provide flexibility within the districts, individual courses within a framework may be customized by doing the following:

- Adding new student learning outcomes to complement the existing competencies and suggested objectives in the program framework
- Revising or extending the student learning outcomes
- Adjusting the semester credit hours of a course to be up 1 hour or down 1 hour (after informing the Mississippi Community College Board [MCCB] of the change)

APPENDIX C: BOOK LIST

Recommended Critical Care Text Book List CIP: 51.0904- Critical Care		
Book Title	**Author (s)**	**ISBN**
AAOS Critical Care Transport	Andrew Pollak	10:1284040992 13:978-1284040999

Recommended Advanced Emergency Medical Technician Text Book List CIP: 51.0904 - Advance Emergency Medical Technician		
Book Title	**Author (s)**	**ISBN**
AAOS Advanced Emergency	Andrew Pollak	10:1449600816 13:978-1449600815