J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: EMS 181 **Credits: 1**

Course Title: Advanced Airway and Shock Management

Course Description:

Introduces core principles of airway, shock, and resuscitation as outlined by the National Emergency Medical Service Education Standards (NEMSES) within the Advanced EMT curriculum. Provides students with a fundamental knowledge of the Cardiopulmonary system, including its assessment and management of shock. Covers cardiac arrest and post-arrest management. Lecture 1 hour. Total 1 hour per week.

General Course Purpose:

This course is designed to equip Advanced EMT (AEMT) students with essential skills in managing airways, mastering resuscitation techniques, and providing comprehensive care for patients in a state of shock.

Course Prerequisites/Corequisites:

Prerequisite: Current Virginia EMT and CPR certification as approved by the Virginia Office of EMS.
Co-requisite: EMS 182: Advanced Airway & Shock Management Lab

Course Objectives:
Upon completing the course, the student will be able to:

- Integrate knowledge of anatomy, physiology, and pathophysiology of the airway and respiratory system to the assessment and treatment of patients.
- Integrate knowledge of airway anatomy, airway assessment, and techniques of assuring a patent airway, including age-related variations in pediatric and geriatric patients, to maintain a patent airway.
- Integrate knowledge of the anatomy of the respiratory system, physiology, and pathophysiology of respiration to the assessment and management of adequate and inadequate breathing situations.
- Integrate knowledge of scene safety and situational awareness, scene management, impact of the environment on patient care.
- Integrate primary assessment information, including age-related variations in pediatric and geriatric patients.
- Integrate the assessment of vital signs and pain, techniques of physical examination (respiratory system including breath sound quality, cardiovascular system, neurological system, musculoskeletal system, and major anatomical regions), and monitoring devices (pulse oximetry, non-invasive blood pressure, cardiac monitoring- 12 lead acquisition and transmission, blood glucose determination, end tidal CO_2 monitoring and interpretation of waveform capnography, and venous blood sampling) including age-related variations in pediatric and geriatric patients to guide patient care.
- Integrate knowledge of medication administration, including use of medication cross-check procedures, use of auto injectors, use of unit-dose, premeasured intranasal

devices, routes of administration, resources for safe administration of weight-based medications, and ethical and safety considerations for pain management to the management of patients.
    - Integrate knowledge of acute medications, including the names, effects, indications, contraindications, side effects, routes of administration, dosages, actions, complications, and interactions to the management of patients.
- Integrate knowledge of chronic or maintenance medications, including the class names, indications, complications, class side effects, and polypharmacy to the assessment and management of patients.
- Integrate assessment findings with principles of epidemiology and pathophysiology, including age-related assessment and treatment modifications for pediatric and geriatric patients, to formulate a field impression and implement a treatment plan for a patient with various respiratory emergencies:
    - Respiratory distress/failure/ arrest;
    - Upper airway diseases (foreign body, croup, epiglottitis);
    - Lower airway disease (asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD);
    - Spontaneous pneumothorax;
    - Pulmonary edema; and
    - Other respiratory disorders
- Apply knowledge of essential components in normal perfusion, physiologic response, types of shock, treatment of shock, complications of shock, and circulatory assist devices, including age- related modifications for pediatric and geriatric patients, to the assessment, care, and transportation of a patient in shock.
- Apply knowledge of resuscitation concepts, including ethical issues in resuscitation, CPR physiology, resuscitation system components, special arrest and peri-arrest situations, post resuscitation support, and termination or resuscitation, to patients in shock, respiratory or cardiac failure or arrest, termination of resuscitation and post resuscitation management.

Major Topics to be Included:

None

Effective Date/Updated: June 5, 2024