

Course Syllabus

Department: PHYSICAL EDUCATION AND INTEGRATED HEALTH

Date: 2/14/13

I. Course Prefix and Number: EMCR 325

Course Name: Advanced EMT Critical Care Refresher

Credit Hours and Contact Hours: 3 credit hours, 4 contact hours

Catalog Description including pre- and co-requisites: *supporting data required for grade prerequisite of 'C' or higher.*

This course is designed for individuals who have been certified by the NYS Department of Health as a Emergency Medical Technician - Critical Care for the purpose of maintaining their competency in providing emergency medical care. The content reviews the concepts and materials covered in the Critical Care course. After successful completion of this course, students are eligible to take the NYS certification exam. Recertification is required every three (3) years. Persons will only be able to receive college credit for this course once. Prerequisite: Proof of certification as a Critical Care Technician.

Relationship to Academic Programs and Curriculum including SUNY Gen Ed designation if applicable:

Can be used as Physical Education or General Elective.

II. Course Student Learning Outcomes: *State the student learning outcome(s) for the course (e.g. Student will be able to identify...)*

Student will be able to recognize and perform all learning outcomes of the EMT, such as:

Identify life threatening emergencies

Take immediate steps to correct any life threatening emergencies

Perform CPR and use an AED

Administer oxygen

Prevent the patients' condition from worsening before higher trained EMS providers' arrive.

Treat shock, stabilize fractures, bandage wounds and provide other needed care

Student will be able to recognize and perform all learning outcomes of the Advanced EMT-Critical Care, such

as: Explain the EMS Systems/Role and Responsibilities, Medical Director, Well-Being, Illness and Injury

Prevention, Medical/Legal and Ethical Issues.

Identify the major aspects of anatomy and physiology including body organization, anatomical

terminology, cell transport mechanisms, metabolism, tissue types and basic fluid and electrolyte

information.

Review all general pharmacology as taught at the NYS EMT level.

Discuss the foundation material in pharmacology including names and sources of drugs, drug

classification, sources of information about drugs, drug legislation, schedules of controlled drugs, and

standardization of drugs. Other topics will include general properties of drugs, drug forms, routes of drug

administration, interactions and drug storage. Special considerations in drug therapy for pregnant

patients, pediatrics and geriatrics are also discussed and reviewed.

Review and understand the autonomic nervous system, essential to understanding the mechanism of

action of drugs. Pharmacokinetics and pharmacodynamics will be integrated into this section.

Perform safe and precise venous access while gaining knowledge and awareness relative to

medical/legal aspects of invasive procedures and medication administration.

Perform mathematical calculations regarding medication calculations and administration. Methods for

calculating dosages include those for intravenous parenteral medications, intravenous infusions, and

administration of oral medications,. Methods for calculating doses for infants and children will be

discussed and performed.

Establish and/or maintain a patent airway, and oxygenate and ventilate a patient

Recognize and explain anatomy and physiology of the respiratory system and present the upper and

lower airways.

Differentiate the differences in the airway between adults and pediatrics.

Recognize lung/respiratory volumes in detail, ventilation and respiration, measurement of gases and

causes of decreased oxygen concentrations in the blood.

Discuss the pathophysiology of airway obstruction and its negative impact on a patient's condition.

Perform airway management including assessment, manual maneuvers, various adjunctive equipment

and procedures for adults and pediatrics.

Discuss and perform appropriate oxygenation procedures, delivery equipment and devices and special

considerations for patients with stoma. This includes various suctioning devices, adjunctive equipment

and techniques.

Discuss the pathophysiology of airway obstruction (laryngeal spasm and edema, aspiration, etc.) and

recognizing the appropriate management which many include manual maneuvers, adjunctive equipment

(oral and nasal airways, endotracheal tub, lighted stylet and multilumen airways), and procedures

(orogastric/nasogastric decompression, orotracheal/nasotracheal intubations digital intubations) .

Recognize and identify respiratory compromise, technique and adjunctive equipment.

This includes basic

ventilation, adjuncts, the automatic transport ventilator, cricoid pressure and ventilating pediatric and

patients with stomas.

Perform a more detailed patient assessment with emphasis on a more complete approach to history

taking, techniques of the physical exam, scene size-up focuses, initial assessment, focused history and

physical exam, a detailed physical exam ending with clinical decision making to develop and emergency

care plan for both the trauma and medical patient..

Recognize the various trauma systems and mechanism of injury to a patient. This covers principles of kinematics.

Explain and differentiate the differences between trauma systems, trauma centers, and transportation

considerations, Including detailed discussion of energy, how energy exchange occurs and its relationship

to blunt and penetrating injuries by body system and cavity.

Explain the pathophysiological principles and assessment finding to formulate a field impression and

implement a treatment plan for the trauma patients with suspected head and/or facial injuries.

Recognize the various causes of hemorrhage and various types of shock along with the management of shock.

Understand burn injury management and supportive care:

The student will be able to recognize and explain treatment and management of the medical patients with

the following conditions: respiratory emergencies, cardiovascular emergencies, diabetic emergencies,

allergic reactions, poison/overdose, neurological emergencies, non-traumatic abdominal emergencies,

environmental emergencies, behavioral emergencies, gynecological emergencies, obstetrical

emergencies, neonatal resuscitations, pediatric emergencies, and geriatric emergencies.

III. Assessment Measures (Summarize how the college and student learning outcomes will be assessed): *For each identified outcome checked, please provide the specific assessment measure.*

List identified College Learning Outcomes(s)	Specific assessment measure(s)
<i>Computer Literacy</i>	<i>Student must complete several on line classes requiring completion and certification in NIMS 100, MOLST, Mandatory Child Reporting and Hazardous Materials Awareness. Upon successful completion of these classes on line a certificate is issued that must be kept with the student's records.</i>
Oral Communications	Student will learn to verbally communicate with the patient through mock patient assessment scenarios and the NYSDOH Bureau of EMS Practical Skills Exam
Reading	Student will complete written quizzes, exams and NYSDOH Bureau of EMS Written Exam
Critical Thinking	Student will develop critical thinking skills through hands on mock patient assessment scenarios and the NYSDOH Bureau of EMS Practical Skills Exam
Mathematics	Student will develop mathematical skills through numerous math calculations for the various drugs and routes of administration.

IV. Instructional Materials and Methods

Types of Course Materials:

Textbooks, Workbooks, Manikins, and various other types of EMS equipment. Instructor will review and reinforce the materials the student has read. The student will be instructed on the various pieces of equipment used in the curriculum.

Methods of Instruction (e.g. Lecture, Lab, Seminar ...):

The instructor will lecture. There will be instruction of labs and scenario role playing during the course.

V. General Outline of Topics Covered:

EMS Systems
 EMS Systems Communications

Medical/Legal/Ethics
Anatomy and Physiology
Medical Terminology
Pathophysiology
Pharmacology
Medication Administration
Intravenous Access
General Pharmacology
Airway Management, Ventilation, Respiration, and Oxygenation (Basic and Advanced)
CPR/AED
Patient Assessment – Trauma and Medical Patients
 Scene Size Up
 Primary Assessment
 History Taking
 Secondary Assessment
 Reassessment
 Clinical Decision Making
Trauma Systems and Mechanism of Injury
Hemorrhage and Shock and Resuscitation
Burns
Head, Thoracic and Abdominal Trauma
Medical Emergencies
 Medical Overview
 Neurology
 Abdominal and Gastrointestinal Disorders
 Infectious Diseases
 Endocrine
 Psychiatric
 Cardiovascular
 Respiratory
 Genitourinary/Renal
 Gynecology
Special Patient Populations
 Pregnant Patients
 Pediatrics
 Geriatrics
 Patients with Special Challenge
EMS Operations
 Principles of Safely Operating a Ground Ambulance
 Incident Management
 Air Medical
 Vehicle Extrication
 Hazardous Materials Awareness