

**UMBC DEPARTMENT OF EMERGENCY HEALTH SERVICES  
PARAMEDIC PROGRAM  
OVERVIEW OF THE PROFESSION AND PROGRAM GOALS**

**Overview of the Program**

The EMT paramedic is a professional provider of emergency care who must possess the essential attributes that are demanded by the profession, including general academic ability, physical abilities, interpersonal relationship skills, capacity for appropriate judgment and orientation toward human services.

**The goals of the paramedic program include:**

- Prepare students as entry-level advanced life support prehospital providers at the level of paramedic.
- Prepare students to enter the field with introductory knowledge of the following additional areas:
  - Leadership
  - Supervision
  - Finance and planning
  - Research

**Approved by the Program Advisory Board: November 17, 2015**

## **EHS 461 INTRODUCTION TO PARAMEDIC PRACTICE**

### **COURSE DESCRIPTION**

This is an introductory course to the paramedic track. Topics include roles and responsibilities of the paramedic, EMS systems and communications, documentation, ethics, ambulance operations, MCI command, rescue awareness, hazardous materials incidents, terrorism, and crime scene awareness. Instruction will be a combination of lecture, discussion, and classroom exercises. Students should be prepared and participate in class discussions without advance notice. Reading assignments are to be completed prior to each class session. Students entering this course must have successfully completed Biology 251 and 252, plus labs (or the equivalent) with a grade of "C" or better. Students must also be minimally certified at the level of EMT Basic.

### **COURSE GOALS AND OBJECTIVES**

The primary goal of this course is to introduce entry level EMS students to the key foundations of our field. Provider wellness, roles and responsibilities of the paramedic, professionalism, documentation, personal and radio communication, medical consultation, ethics, and career and life-long learning are among the topics to be discussed.

Students who complete this course will be able to work in both an individual and team environment to:

- Discuss key tenets of professionalism and ethics and what makes one a professional.
- Describe what roles personal and therapeutic communication serves to our patient, peers, and members of the in-hospital medical team.
- Understand and discuss the concept of a team and the role that each participant plays.
- Discuss the roles and responsibilities of a paramedic.
- Outline the value of life-long learning.

## **EHS 462 FUNDAMENTALS OF PATIENT MANAGEMENT**

### **COURSE DESCRIPTION**

This course introduces students to the fundamentals of prehospital patient management. Topics include the pharmacodynamics and pharmacokinetics of medications, administration techniques, and therapeutic communications. Additional topics include medication mathematics, intravenous fluid and oxygen administration, basic and advanced airway management, surgical and non-surgical airways, and pharmacologic adjuncts used in airway management and ventilation. Instruction will be a combination of lecture, discussion, and laboratory sessions. Students should be prepared and participate in class discussions without advance notice. Reading assignments are to be completed prior to each class session. Students entering this course must have successfully completed Biology 251 and 252, plus labs (or the equivalent) with a grade of "C" or better. Students must also be minimally certified at the level of EMT Basic. A laboratory fee of \$50 is required for this course.

### **COURSE GOALS AND OBJECTIVES**

The primary goal of this course is to introduce entry level EMS students to the principles of pharmacology and various levels of airway management.

Students who complete this course will be able to work in both an individual and team environment to:

- Discuss differentiate between pharmacodynamics and pharmacokinetics and then explain those concepts given any medication presented in this course.
- Calculate correct drug dosages given a variety of medication routes of administration.
- Successfully manage a patient with a compromised airway using basic airway devices.
- Successfully manage a patient with a compromised airway using advanced airway devices.
- Discuss and demonstrate how to successfully paralyze and place an advanced airway device into a patient in extremis.

## **EHS 463 BASICS OF CARDIOLOGY**

### **COURSE DESCRIPTION**

This is an intense course designed to discuss the principles of basic electrocardiography and cardiovascular disease. Topics include: 3-lead EKG rhythm strip interpretation, management of cardiovascular related illness, ischemic heart disease and failure, cardiogenic shock, pericardial disorders, and hypo- and hypertensive emergencies. Patient specific assessment and associated pharmacologic interventions will also be discussed. Instruction will be a combination of lecture, discussion, and laboratory sessions. Students should be prepared and participate in class discussions without advance notice. Reading assignments are to be completed prior to each class session. Students entering this course must have successfully completed Biology 251 and 252, plus labs (or the equivalent) with a grade of "C" or better.

### **COURSE GOALS AND OBJECTIVES**

The primary goal of this course is to introduce entry level EMS students to the principles of basic electrocardiography and cardiovascular disease.

Students who complete this course will be able to work in both an individual and team environment to:

- Identify key cardiac dysrhythmias given a 3-lead EKG rhythm strip.
- Discuss the pathophysiology, symptomatology, and prehospital treatment for each of the following conditions:
  - Ischemic heart disease
  - Congestive heart failure
  - Cardiogenic shock
  - Various pericardial disorders
  - Hypotension
  - Hypertension
- Demonstrate how to properly assess a patient complaining of a variety of cardiovascular symptoms.
- Discuss the mechanism of action, indications, contraindications, side effects, and dosage for a variety of cardiac related medications.

## **EHS 464 ADVANCED CARDIOLOGY & RESPIRATORY EMERGENCIES**

### **COURSE DESCRIPTION**

This is an intense course designed to discuss the principles of advanced electrocardiography and respiratory system disease. Topics include: 12-lead EKG strip interpretation, introduction to Advanced Cardiac Life Support (ACLS), and the recognition and treatment of illnesses related to the airway and respiratory system. Patient specific assessment and associated pharmacologic interventions will also be discussed. Instruction will be a combination of lecture, discussion, and laboratory sessions. Students should be prepared and participate in class discussions without advance notice. Reading assignments are to be completed prior to each class session. A laboratory fee of \$50 is required for this course. Students entering this course must have successfully completed EHS 481 with a grade of "C" or better.

### **COURSE GOALS AND OBJECTIVES**

The primary goal of this course is to build upon the basic EKG and cardiac knowledge acquired in EHS 462, Basics of Cardiology. Students who complete this course will be able to work in both an individual and team environment to:

- Identify key cardiac dysrhythmias given a 12-lead EKG rhythm strip.
- Discuss the pathophysiology, symptomatology, and prehospital treatment for each of the following conditions:
  - Acute respiratory failure
  - Allergic and anaphylactic reactions
  - COPD
  - Pneumonia, TB, and ARDS
  - Pulmonary emboli, pulmonary hypertension, and cor pulmonale
  - Toxic inhalation
- Demonstrate how to properly assess a patient complaining of a variety of respiratory symptoms.
- Discuss the mechanism of action, indications, contraindications, side effects, and dosage for a variety of respiratory related medications.

## EHS 465 MEDICAL EMERGENCIES I

### COURSE DESCRIPTION

The medical emergencies I course focuses on assessing and managing patients with specific medical conditions. Topics include: neurologic emergencies, HEENT diseases, abdominal, genitourinary, and renal emergencies, toxicology, anaphylaxis, hematologic and immunologic emergencies, infectious disease, and home health care. Patient specific assessment and associated pharmacologic interventions will also be discussed. Instruction will be a combination of lecture, discussion, and laboratory sessions. Students should be prepared and participate in class discussions without advance notice. Reading assignments are to be completed *prior* to each class session. Students entering this course must have successfully completed EHS 481 with a grade of "C" or better.

### COURSE GOALS AND OBJECTIVES

The primary goal of the medical emergencies I course is to focus on assessing and managing patients with specific medical needs. Students will incorporate the knowledge and skills learned in EHS 461-463 to evaluate complicated medical conditions such as those listed in the course objectives.

Students who complete this course will be able to work in both an individual and team environment to:

- Discuss the pathophysiology, symptomatology, and prehospital treatment for each of the following:
  - Neurologic emergencies
  - HEENT diseases
  - Abdominal, genitourinary, and renal emergencies
  - Toxicology emergencies
  - Allergic reactions and anaphylaxis
  - Hematologic and immunologic emergencies
  - A variety of infectious and communicable diseases
- Demonstrate how to properly assess and management a patient who is receiving home health care.
- Discuss the mechanism of action, indications, contraindications, side effects, and dosage for a variety of medications related to specific medical emergencies.

## EHS 466 MEDICAL EMERGENCIES II

### COURSE DESCRIPTION

The medical emergencies II course focuses on assessing and managing patients with specific medical conditions. Topics include: obstetrics and gynecology, neonatology, pediatrics, gerontology, psychiatric and behavioral emergencies and patients with special challenges. Patient specific assessment and associated pharmacologic interventions will also be discussed. Instruction will be a combination of lecture, discussion, and laboratory sessions. Students should be prepared and participate in class discussions without advance notice. Reading assignments are to be completed *prior* to each class session. Students entering this course must have successfully completed EHS 481 with a grade of "C" or better.

### COURSE GOALS AND OBJECTIVES

The primary goal of the medical emergencies II course is to focus on assessing and managing patients with specific medical needs. Students will incorporate the knowledge and skills learned in EHS 461-463 to evaluate complicated medical conditions such as those listed in the course objectives.

Students who complete this course will be able to work in both an individual and team environment to:

- Discuss the pathophysiology, symptomatology, and prehospital treatment for each of the following:
  - Obstetrics and gynecological emergencies
  - Childbirth and care of the neonatal patient
  - Pediatric patients and various illnesses across the age developmental spectrum
  - Illnesses associated with the aging patient
  - Various psychological and behavioral emergencies
  - Illnesses associated with a variety of patients with special needs
- Discuss the mechanism of action, indications, contraindications, side effects, and dosage for a variety of medications related to specific medical emergencies.

## EHS 467 INTRODUCTION TO TRAUMA EMERGENCIES

### COURSE DESCRIPTION

This course covers the pathophysiology, assessment and management of adult and pediatric patients with injuries involving various body systems. Successful completion of all written and practical skills will result in ITLS certification.

Students must wear appropriate clothing for participation in physical activities commonly encountered by EMS providers. Students will be working on the floor, in the ambulance simulator, and various other locations. **Students will be required to wear eye protection during any invasive procedure. If you cannot wear goggles or safety glasses due to corrective lenses, you will be required to provide your own eye protection subject to approval by the instructor.** Students are also encouraged to provide their own stethoscope. Any student not able to participate as a partner in the lifting of a normal adult male should discuss his or her continued participation in the paramedic track with their advisor and the laboratory instructor. Temporary medical conditions preventing full participation in laboratory exercises must be documented with a note from a licensed health care professional clearly stating the extent and time frame of limited activity.

### COURSE GOALS AND OBJECTIVES

The primary goal of this course is to prepare the student to respond to, assess, and manage a variety of patients with conditions that have resulted from blunt or penetrating trauma. Students who complete this course will be able to work in both an individual and team environment to:

- Discuss the proper response to a trauma scene.
- Differentiate between the mechanisms of injury caused by blunt and penetrating trauma.
- Discuss and manage patients with trauma due to the following conditions or specific body system(s)
  - Multi-system trauma
  - Musculoskeletal system
  - Burn trauma
  - Soft tissue trauma
  - Trauma to the face and neck
  - Trauma to the head and spine
  - Chest trauma
  - Abdominal and genitourinary trauma
  - Orthopedic trauma
  - Environmental trauma



## **EHS 468 EMS CAPSTONE EXPERIENCE**

### **COURSE DESCRIPTION**

This course serves as a capstone experience course at the end of the four semester paramedic program and prepares the student for sitting for national board examinations. Topics include: responding to the field cardiac arrest, ACLS and PALS certification, oral board examinations, cumulative practical skill evaluations, overview of the Candidate Physical Ability Test (CPAT), and preparation for the National Registry written and practical paramedic examination.

### **COURSE GOALS AND OBJECTIVES**

The primary goal of this course is to prepare the student for sitting for national board examinations for the EMT Paramedic.

Students who complete this course will be able to work in both an individual and team environment to:

- Using high fidelity simulation manikins, respond and appropriately manage a simulated adult patient in cardiac arrest.
- Using high fidelity simulation manikins, respond and appropriately manage a simulated pediatric patient in cardiac arrest.
- Prepare and correctly respond to a variety of oral board style questions based on course material in the national standardized paramedic curriculum.
- Correctly identify and manage simulated patients based on the National Registry of EMT Paramedic practical examination.
- Successfully complete the OSPE practice written examination.

## **EHS 481 ALS FIELD AND CLINICAL EXPERIENCE I**

### **COURSE DESCRIPTION**

This field and hospital internship is an introduction to the clinical experience. Students will concentrate on patient assessment and intravenous access techniques while in the clinical setting. Students will also work on ALS skills and techniques in a laboratory setting. Appropriate treatment modalities will be stressed.

Students will also have clinical internships that will be accomplished in an Emergency Department setting. The students will have 32 hours of clinicals that can be done with either 8 or 12 hour shifts. The purpose of these clinicals is to give the paramedic student practice in patient assessment, initiation and termination of IV therapy, and venous blood drawing experience. All skills completed in EHS 481 will count towards the students overall Paramedic student skill goals as outlined in **Appendix A**.

### **COURSE GOALS AND OBJECTIVES**

The primary goal of this course is to provide the Paramedic intern with a hospital clinical experience where they may complete the following skills:

- 10 IV attempts
- 5 successful IV attempts
- 10 patient assessments

## EHS 482 FIELD AND CLINICAL EXPERIENCE II

### COURSE DESCRIPTION

This field and hospital internship is designed to integrate clinical experience with knowledge, skills and techniques presented in EHS paramedic track course work. Supervised experience is provided in hospital and field settings. Emphasis is placed on patient assessment, trauma, respiratory pharmacology, cardiology, pediatrics, geriatrics and medical emergencies. Appropriate treatment modalities will be stressed.

### COURSE GOALS AND OBJECTIVES

The primary goal of this course is to provide the Paramedic intern with a hospital clinical and field experience where they will access to a variety of patients as outlined in the course description. Additionally the intern will be exposed to a variety of high fidelity simulations in a controlled classroom setting. During this course, the intern will continue to work towards their total skill goals number as outlined in **Appendix A**. The student will be successful in EHS 482 by completing the following:

Clinical sites and the minimum shifts required:

- St. Agnes Hospital ER ..... 5 shifts
- Johns Hopkins Hospital ER ..... 5 shifts
- Maryland Poison Control Center ..... 2 shifts

Clinical sites and the total shifts required:

- Hospital ER's ..... 15 shifts
- Baltimore City FD EMS ..... 12 shifts
- Maryland Poison Control Center ..... 2 shifts
- Simulations ..... 3 shifts

All sites and required hours are subject to change upon availability and without notice.

## EHS 483 ALS FIELD AND CLINICAL EXPERIENCE III

### COURSE DESCRIPTION

This is the first course of a two-semester "capstone" field and hospital internship designed to integrate clinical experience with knowledge, skills and techniques presented in EHS paramedic track course work. Supervised experience is provided in hospital and field settings. Emphasis is placed on patients in crisis and refining the skills to assess and appropriately treat patients experiencing a variety of medical and trauma-related illnesses.

### COURSE GOALS AND OBJECTIVES

The primary goal of this course is to provide the Paramedic intern with a hospital clinical and field experience where they will access to a variety of patients as outlined in the course description. Additionally the intern will be exposed to a variety of high fidelity simulations in a controlled classroom setting. During this course, the intern will continue to work towards their total skill goals number as outlined in **Appendix A**. The student will be successful in EHS 483 by completing the following minimum shifts:

Clinical sites and the minimum shifts required:

- Johns Hopkins Adult ER ..... 2 shifts
- Johns Hopkins Lifeline (critical care) ..... 3 shifts
- Johns Hopkins Pediatrics ER ..... 3 shifts
- Johns Hopkins Psychiatric ER ..... 3 shifts
- Johns Hopkins Pediatrics Burn Clinic ..... 1 shift
- Johns Hopkins PACU ..... 1 shift
- Kennedy Krieger Pediatrics ..... 3 shifts
- St. Agnes Hospital ER ..... 5 shifts
- St. Agnes Hospital Anesthesia ..... 3 shifts
- Union Memorial CCU ..... 2 shifts
- Union Memorial Cath Lab ..... 2 shifts
- Simulation Lab ..... 2 shifts
- Ambulance Shifts
  - Anne Arundel County FD EMS ..... 4 shifts
  - Queen Anne's County EMS ..... 2 shifts

All sites and required hours are subject to change upon availability and without notice.

## EHS 484 FIELD AND CLINICAL EXPERIENCE IV

### COURSE DESCRIPTION

This is the second course of a two-semester "capstone" field and hospital internship designed to integrate clinical experience with knowledge, skills and techniques presented in EHS paramedic track course work. Supervised experiences provided in hospital and field settings. Emphasis is placed on refining the skills to assess and appropriately treat patients experiencing a variety of medical and trauma-related illnesses. Additional internship time is spent with local EMS agencies learning about the role of supervisors in the field environment.

### COURSE GOALS AND OBJECTIVES

The primary goal of this course is to provide the Paramedic intern with a hospital clinical and field experience where they will access to a variety of patients as outlined in the course description. Additionally the intern will be exposed to a variety of high fidelity simulations in a controlled classroom setting. During this course, the intern will finish working towards their total skill goals number as outlined in **Appendix A**. The student will be successful in EHS 484 by completing the following minimum shifts:

### Clinical Sites

The intern will complete any minimum skill goals that have not been completed prior to this semester. The intern will also complete a final field internship that will consist of 10 consecutive field shifts where the intern will act as team lead on all calls while be evaluated by a preceptor on the ability of the intern to perform at the level of an entry level paramedic. This final field internship will begin after all skill goals as outlined in **Appendix A** have been met.

Appendix A

**Minimum Skill Goals**

-	<u>National Standard Goals</u>	<u>UMBC Paramedic Students Goals</u>
<b><u>Age Range</u></b>	-	-
Total Pediatric Patients (age 0 - 17)	30	30
Total Adult Patients (age 18 - 65)	50	50
Total Geriatric Patients (age > 66)	30	30
<b><u>Complaints</u></b>	-	-
Chest Pain	30	30
Altered Mental Status	20	20
Abdominal Pain	20	20
Dizziness	10	10
Syncope	10	10
Breathing Problem	20	20
Pediatric Respiratory	8	8
Weakness	10	10
<b><u>Impressions</u></b>	-	-
Cardiac Arrest	5	5
Trauma	40	40
Obstetrics	10	10
Respiratory	20	20
Psychiatric	20	20
Cardiac	20	20
CVA	0	5

