



**APPNA Institute of Public Health (AIPH)**

**Jinnah Sindh Medical University (JSMU)**

## **Curriculum**

**CERTIFICATE IN EMERGENCY MEDICAL TECHNICIAN**

## **CURRICULUM - EMERGENCY MEDICAL TECHNICIAN (EMT) COURSE**

**Title:** Diploma in Emergency Medical Technician

**Duration:** One year-Diploma

**Teaching Hours:**

1440 hours (480 conduct hours/ semester) i.e. six days per week/ five hours a day/ 30 hours per week

**No of semester:**

03 (4 months/semester)

**Course objectives:**

At successful completion of the course, the student will be able to:

- Demonstrate the basic skills for ambulance operation, trauma life support and basic life support
- Recognize the nature and seriousness of the patient's condition or extent of injuries to assess requirements for emergency medical care.
- Administer appropriate emergency medical care based on assessment findings of the patient's condition.
- Perform safely and effectively the expectations of the job description.

**Course Design:**

Module I: Introduction & Cardio-pulmonary system

Module II: Basic Disaster Life Support

Module III: Introduction to Ambulance Service Operation & Emergency Medical Services

**How to Use the Curriculum**

There are three modules of instruction in the core content. Each lesson has the following components:

**Objectives**

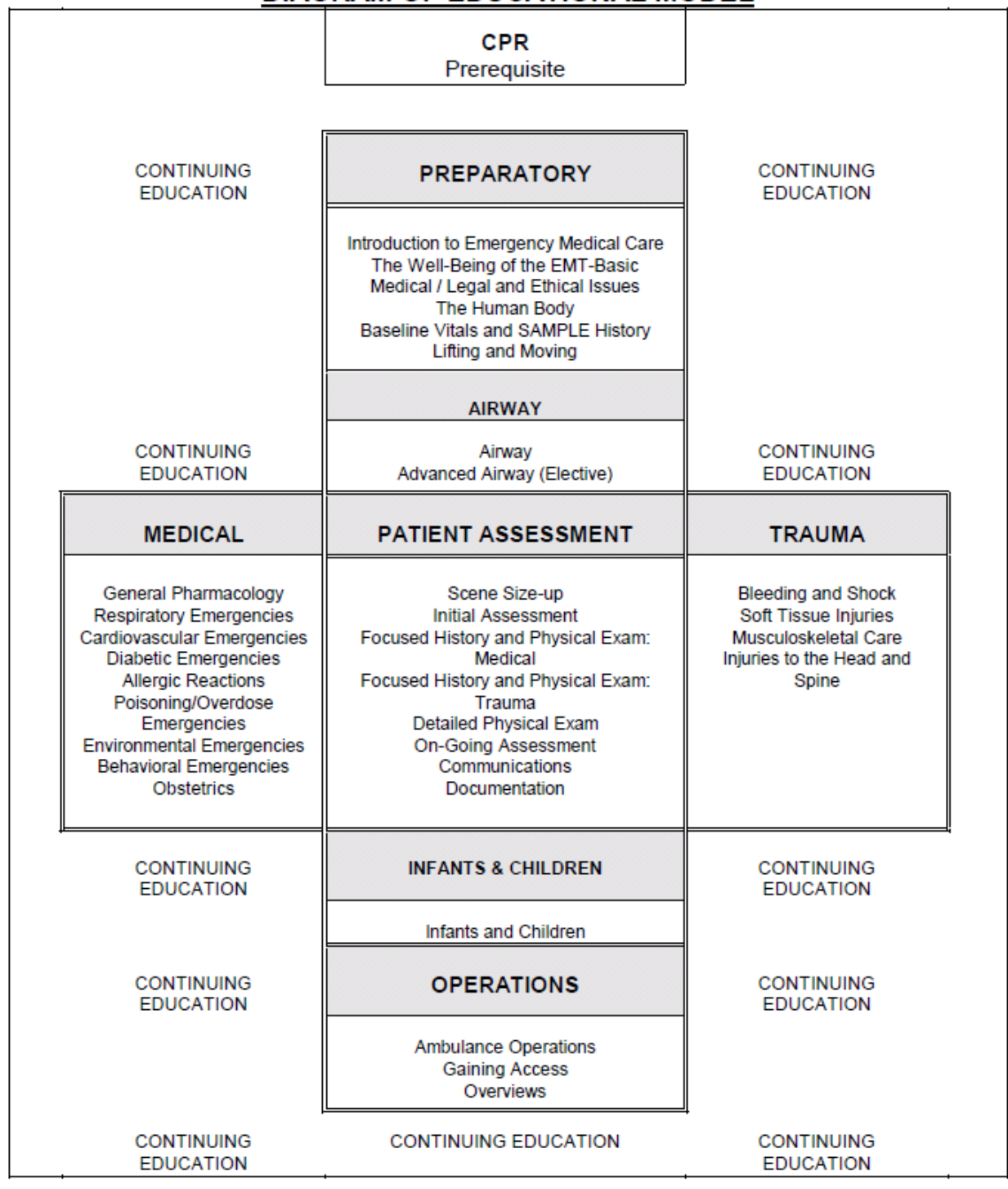
The objectives are divided into three categories: Cognitive, Affective, and Psychomotor.

**Cognitive:** mental process, reasoning, intuition, perception

**Affective:** emotional process feelings

**Psychomotor:** physical process, muscular activity

## DIAGRAM OF EDUCATIONAL MODEL



### **Career Requirements:**

Responds to emergency calls to provide efficient and immediate care to the critically ill and injured, and transports the patient to a medical facility. After receiving the call from the dispatcher, drives the ambulance to address or location given, using the most expeditious route, depending on traffic and weather conditions. Observes traffic ordinances and regulations concerning emergency vehicle operation. Upon arrival at the scene of crash or illness, parks the ambulance in a safe location to avoid additional injury.

Prior to initiating patient care, the EMT-Basic will also "size-up" the scene to determine that the scene is safe, the mechanism of injury or nature of illness, total number of patients and to request additional help if necessary. In the absence of law enforcement, creates a safe traffic environment, such as the placement of road flares, removal of debris, and re-direction of traffic for the protection of the injured and those assisting in the care of injured patients.

Determines the nature and extent of illness or injury and establishes priority for required emergency care. Based on assessment findings, renders emergency medical care to adult, infant and child, medical and trauma patients. Duties include but are not limited to, opening and maintaining an airway, ventilating patients, and cardiopulmonary resuscitation, including use of automated external defibrillators.

Provide pre-hospital emergency medical care of simple and multiple system trauma such as controlling hemorrhage, treatment of shock (hypo-perfusion), bandaging wounds, and immobilization of painful, swollen, deformed extremities. Medical patients include: Assisting in childbirth (female), management of respiratory, cardiac, diabetic, allergic, behavioral, and environmental emergencies, and suspected poisonings. Searches for medical identification emblem as a clue in providing emergency care. The EMT-Basic will also be responsible for administration of oxygen, oral glucose and activated charcoal. Reassures patients and bystanders by working in a confident, efficient manner. Avoids mishandling and undue haste while working expeditiously to accomplish the task. Where a patient must be extricated from

entrapment, assesses the extent of injury and gives all possible emergency care and protection to the entrapped patient and uses the prescribed techniques and appliances for safely removing the patient. If needed, radios the dispatcher for additional help or special rescue and/or utility services. Provides simple rescue service if the ambulance has not been accompanied by a specialized unit. After extrication, provides additional care in triaging the injured in accordance with standard emergency procedures.

Complies with regulations on the handling of the deceased, notifies authorities, and arranges for protection of property and evidence at scene. Lifts stretcher, placing in ambulance and seeing that the patient and stretcher are secured, continues emergency medical care. From the knowledge of the condition of the patient and the extent of injuries and the relative locations and staffing of emergency hospital facilities, determines the most appropriate facility to which the patient will be transported, unless otherwise directed by medical direction. Reports directly to the emergency department or communications center the nature and extent of injuries, the number being transported, and the destination to assure prompt medical care on arrival. Identifies assessment findings which may require communications with medical direction for advice and for notification that special professional services and assistance be immediately available upon arrival at the medical facility.

Constantly assesses patient en route to emergency facility, administers additional care as indicated or directed by medical direction. Assists in lifting and carrying the patient out of the ambulance and into the receiving facility. Reports verbally and in writing their observation and emergency medical care of the patient at the emergency scene and in transit to the receiving facility staff for purposes of records and diagnostics. Upon request, provides assistance to the receiving facility staff.

After each call, restocks and replaces used linens, blankets and other supplies, cleans all equipment following appropriate disinfecting procedures, makes careful check of all equipment so that the ambulance is ready for the next run. Maintains ambulance in efficient operating condition. Ensures that the ambulance is clean and washed and kept in a neat orderly

condition. In accordance with local, state or federal regulations, decontaminates the interior of the vehicle after transport of patient with contagious infection or hazardous materials exposure. Determines that vehicle is in proper mechanical condition by checking items required by service management. Maintains familiarity with specialized equipment used by the service.

Attends continuing education and refresher training programs as required by employers, medical direction, licensing or certifying agencies. Meets qualifications within the functional job analysis.

## DESCRIPTION OF MODULES

### **Module I: Introduction & Cardio-pulmonary system**

This course will train students to respond to, assess and manage cardiac and respiratory emergencies using basic life support skills and automatic external defibrillation based on American Heart Association Guidelines standards.

#### ***Learning Objectives***

##### **A. Cognitive Objectives for airway and breathing management**

By the end of this module, the student should be able to:

- Define clinical death and biological death, stating the approximate time in which brain cells will begin to die if they do not receive oxygen.
- Describe the steps in the head-tilt chin-lift.
- Relate mechanism of injury to opening the airway.
- Describe the steps in the jaw thrust maneuver.
- Describe how to ventilate a patient with a resuscitation mask or barrier device.
- Describe how ventilating an infant or child is different from an adult.
- List the steps in the mouth-to-mouth ventilation technique and explain how that technique differs depending on the size of the patient.
- Give the rate for delivering ventilations to adult, child, and infant patients.
- State what a First Responder may do to prevent air from entering the patient's stomach (gastric distention) during artificial ventilation.
- List three factors that may cause partial or complete airway obstruction.



- List three signs of partial airway obstruction.
- State when you should treat a partial airway obstruction as if it were a complete airway obstruction.
- Describe three things you will commonly notice about a conscious patient with a complete airway obstruction.
- Describe how to clear a foreign body airway obstruction in a responsive adult.
- Describe how to clear a foreign body airway obstruction in a responsive child with complete or partial
- Airway obstruction and poor air exchange.
- Describe how to clear a foreign body airway obstruction in a responsive infant with complete or partial airway obstruction and poor air exchange.
- Describe how to clear a foreign body airway obstruction in an unresponsive adult.
- Describe how to clear a foreign body airway obstruction in an unresponsive child.
- Describe how to clear a foreign body airway obstruction in an unresponsive infant.

## **B. Cognitive Objectives for CPR**

By the end of this module, the student should be able to:

- Describe the relationship of the heart, lung, and brain activity.
- List the signs of cardiac arrest.
- List the reasons for the heart to stop beating.
- Define the components of cardiopulmonary resuscitation.
- Explain what is happening physiologically in the patient's body during CPR.

- Explain the statistical likelihood of a “successful resuscitation” in a cardiac arrest patient using only CPR.
- Describe each link in the chain of survival and how it relates to the EMS system.
- Define the “ABC’s” of resuscitation.
- Locate the CPR compression site on an adult, child, and infant.
- List the rates and depths of compression and ventilations used during CPR on adults, children, and infants.
- List the steps of one-rescuer adult CPR.
- Describe the technique of external cardiac compressions on an adult patient.
- Describe the technique of external cardiac compressions on a child.
- Describe the technique of external cardiac compressions on an infant.
- Explain when the rescuer is able to stop CPR.
- List the steps of two-rescuer adult CPR.
- List the steps of child CPR.
- List the steps of infant CPR.
- Explain how you can determine that CPR is being performed correctly.
- Describe the complications that can occur during CPR.
- State the advantages of two-rescuer CPR over one-rescuer CPR.

### **C. Cognitive Objectives for Automatic External Defibrillation**

By the end of this module, the student should be able to:

- Define defibrillation.

- Discuss the importance of early defibrillation in a cardiac arrest patient's chain of survival.
- Describe the different types of AED's.
- List the indication for defibrillating a patient.
- List the contraindications for defibrillating a patient.
- Discuss when it is appropriate to interrupt CPR when using the AED.
- List the operational steps to using AED.
- Describe key steps necessary to ensure that the AED is used safely.
- Describe the correct procedure for reassessing the cardiac arrest patient following defibrillation.

#### **D. Affective Objectives for Basic Life Support**

By the end of this module, the student should be able to:

- Respond to the feelings that the family or friends of a patient may be having during a cardiac emergency or obstructed airway event.
- Demonstrate a caring attitude towards patients experiencing a cardiac emergency or obstructed airway event that are in need of emergency medical services.
- Place the interests of the patient experiencing a cardiac emergency or obstructed airway event as the
- Foremost consideration when making any and all patient care decisions.
- Communicate with empathy with family members and friends of the patient experiencing a cardiac emergency or obstructed airway event.

#### **E. Psychomotor Objective of Airway and Breathing management**

By the end of this module, the student should be able to demonstrate the following:

- Determine if a patient has an airway obstruction and if there is adequate breathing.

- Recognize upper airway obstruction on infants, children, and adults, and apply the proper techniques in the correct sequence necessary to correct such an airway obstruction.
- Correctly treat an airway obstruction on the patient who is standing, sitting or lying.
- Properly employ the head-tilt, chin-lift maneuver or the jaw-thrust technique to open the airway.
- Determine respiratory arrest.
- Correctly perform mouth-to-mouth and mouth-to-mask ventilations.
- Correctly perform artificial ventilation techniques on infants, children, and adults.
- Provide airway care and resuscitation for patients with possible neck and spinal injuries.

#### **F. Psychomotor Objectives for CPR**

By the end of this module, the student should be able to demonstrate the following:

- Correctly evaluate a patient to detect cardiac arrest.
- Perform one-rescuer CPR on adult patients, children, and infants.
- Perform two-rescuer CPR, including breaking in on one-rescuer CPR in progress and the proper change of positions.

#### **G. Psychomotor Objectives for Automatic External Defibrillation**

By the end of this module, the student should be able to demonstrate the following:

- Demonstrate the application and operation of the automatic external defibrillator.
- Demonstrate the maintenance of an AED.
- Demonstrate assessment and documentation of patient response to the automatic external defibrillator.
- Demonstrate the skills necessary to complete an Operator's Shift Checklist for an AED.

**Teaching Methods:**

<b>Interactive Lectures/ Small Group Sessions</b>	<b>Practical/Skill Lab sessions</b>	<b>Field Visits</b>
144 hrs	144 hrs	72 hrs

**Student Evaluation****A. Practical examination (40%):**

Instructors will assist students in skill practice. Students are welcome to take as much time as they like to practice before demonstrating skill competency. Skills will be evaluated on a pass/needs remediation basis. If skills are not successfully completed, students will be remediated by the instructor(s). Students may practice and be reevaluated. Students are required to pass all skills to successfully complete the course.

**B. Written examination (40%):** Consists of multiple choice questions. Students must receive a score of 80% or higher to successfully complete the course. If unsuccessfully completed, students will be remediated by the instructor(s). Students may be asked to complete a second examination or to correct the initial examination, at the instructor's discretion.

**C. Continuous Assessment (20%):** Quizzes, Attendance, Class Participation

## **Module II: Basic Disaster Life Support**

This course is designed to provide students with introductory training for disasters requiring medical preparedness. This training complies with national guidelines to standardize emergency response training nationally and to strengthen the nation's public health system. The recognition and management of the disaster scene and victims are reinforced through a unique approach, called the D-I-S-A-S-T-E-R paradigm. The D-I-S-A-S-T-E-R paradigm organizes the students' preparation and response to disaster management. It emphasizes an all-hazards approach to mass casualty incident management and facilitates ongoing qualitative and quantitative assessment of an incident.

### ***Learning Objectives***

By the end of this module, the student should be able to:

- Define "All Hazards" and list the possibilities.
- Define "Disaster" and "Mass Casualty Incident (MCI)".
- Identify the components of DISASTER Paradigm.
- Identify & apply the BDLS triage model using "MASS" & "ID me".
- Describe the scope of disasters (all hazards), including natural and accidental man made events; traumatic and explosive events; nuclear and radio-logical events; biological events; and chemical events.
- Manage the disaster scene and victims by applying the D-I-S-A-S-T-E-R paradigm.
- Understand the need for a triage system (i.e. the BDLS® M.A.S.S. Triage model and "Id-me") and apply for response to a mass casualty event.1. Identify the critical need to establish healthcare preparedness for disasters.
- Identify the critical need to establish healthcare preparedness for disasters.
- Develop knowledge, skills, and attitudes conducive to the effective, timely, and pro-active preparedness for and response to disasters at the local, state, regional, national, and international level.
- Implement current best practices in disaster management, incorporating processes and practices developed by leading national and international disaster preparedness and response entities.

- Apply knowledge through opportunities for service learning, including participation in actual emergency preparedness exercises in the field.
- Expand their professional opportunities and interactions with professionals in the field by, e.g., participation in the preparation and presentation of materials for inclusion in professional or academic meetings.
- Apply disaster management principles to broader management opportunities in a variety of non-disaster fields, such as business and public administration.
- Understand the primary importance of safety in disaster responses, including personal protective equipment, decontamination, universal precautions, blood borne pathogens, basic force protection (care of the responder) and scene and site security.
- Describe the principles of triage, and the ability to effectively perform triage in a disaster setting in order to maximize utility of scarce medical resources.
- Show the clinical competence to provide effective care in a setting of extremely limited resources and otherwise austere environments. This includes improvised medical techniques as well. (Patient Care)
- Understand of Psychological First Aid and caring for responders and when to apply these techniques.

**Teaching Methods:**

<b>Interactive Lectures/ Small Group Sessions</b>	<b>Practical/Skill Lab sessions</b>	<b>Field Visits</b>
144 hrs	144 hrs	72 hrs

**Student Evaluation**

A. Practical examination (40%):

Instructors will assist students in skill practice. Students are welcome to take as much time as they like to practice before demonstrating skill competency. Skills will be evaluated on a pass/needs remediation basis. If skills are not successfully completed, students will be remediated by the instructor(s). Students may practice and be reevaluated. Students are required to pass all skills to successfully complete the course.

B. Written examination (40%): Consists of multiple choice questions. Students must receive a score of 80% or higher to successfully complete the course. If unsuccessfully completed, students will be remediated by the instructor(s). Students may be asked to complete a second examination or to correct the initial examination, at the instructor's discretion.

C. Continuous Assessment (20%): Quizzes, Attendance, Class Participation

### **Module III:**

#### **Introduction to Ambulance Service Operation & Emergency Medical Services**

This module is designed to provide knowledge to EMTs in ambulance operation, lifting & moving patients, documentation, radio communication, legal issues, scene size up and safety. Along with classroom activities, students will perform hands on activities in a simulated environment.

#### ***Learning Objectives:***

At the end of this module, the students should be able to:

- Describe the historical events that lead to EMS systems development.
- Explain the role of federal and state agencies within EMS systems.
- Describe the functional components of EMS systems.
- Explain the different EMS system models; describe integrated process and aspects of field response.
- Explain the integration of the EMS system with community and medical community and describe infrastructure support services functions.
- Demonstrate the skills and knowledge necessary to operate their ambulances.
- Demonstrate the safety of the public will be assured during all phases of the delivery of Emergency Medical Service involving the ambulance.
- Describe the legal aspects of ambulance operation, including appropriate vehicle procedures based upon federal, state, local, and organization regulations.



- Demonstrate the communications responsibilities for receiving and sending radio messages and for interpreting hand signals.
- Describe the ambulance types and operation, including general guidelines about weight restrictions and operation for each type.
- Demonstrate the skills required for ambulance readiness, including inspection, maintenance, and repair.
- Explain the navigation and route planning, including selecting the safest route to the emergency scene and the medical facility.
- Explain and demonstrate the normal and high-risk driving situations and the appropriate driving skills for situations from routine traffic to hazardous weather and traffic conditions.
- Demonstrate the skills required for safety considerations for ensuring safety of passengers, patients and their family, the ambulance, and the crew.

**Teaching Methods:**

<b>Interactive Lectures/ Small Group Sessions</b>	<b>Practical/Skill Lab sessions</b>	<b>Field Visits</b>
144 hrs	144 hrs	72 hrs

**Part 1 – Basic Skills (First 4 class sessions)**

During this part of the course student will learn the fundamental skills needed to operate an ambulance. We will focus on practicing and evaluating the following skills:

1. Vehicle Skills

Pre-operational vehicle check, safe driving, and operating vehicle radios

2. Equipment Knowledge

Locate and rapidly access ambulance equipment.

3. Stretcher Mechanics

Lifting, lowering and loading ambulance stretchers.

#### 4. Written Skills

Run report writing and map reading.

This part of the course is pass/fail. If student pass he/she will receive 30% in semester grade.

#### **Part 2 – Scenario Practice (6 Class sessions)**

During this part of the course the class will operate like an ambulance service. Students take turns being team leaders, team members, dispatchers, first responders and hospital staff. Each class session crews will respond, treat and transport patients in life-like scenario role-plays.

Students will demonstrate the skills to operate an ambulance.

This part of the course is pass/fail. If student pass he/she will receive 30% in semester grade. Evaluation is based on attendance, class participation, willingness to learn, willingness to receive constructive feedback and score on a written SOP (Standard Operating Procedures) test.

#### **Part 3 – Team Leader Evaluation (2 Class Sessions)**

During this part of the course students will be evaluated on their team leadership abilities. Students will be asked to lead a team of your peers in the operation of an ambulance call, delivery of quality patient care, and documentation of their actions with an EMS run report. This is a pass/fail part of the course. Student will be evaluated on one scenario. If student pass he/she will receive 30% in semester grade.

#### **Student Evaluation:**

A. Written Examination (40%): MCQ's

B. Practical Examination (40%)

C. Continuous Assessment (20%): Quizzes, Attendance, Class Participation

Students are graded on a percent system.

Part 1 Basic Skills	30%
Part 2 Scenario Practice	30%
Part 3 Team Leader Evaluation	30%
Documentation	10%