



# Model Curriculum

QP Name: Pre-Hospital Trauma Assistant

QP Code: HSS/Q2305

QP Version: 1.0

NSQF Level: 4

Model Curriculum Version: 1.0

Healthcare Sector Skill Council || Healthcare Sector Skill Council, 520, DLF Tower A, 5th Floor, Jasola  
District Centre, New Delhi – 110025

## Table of Contents

Training Parameters.....	3
Program Overview .....	4
Training Outcomes.....	4
Compulsory Modules.....	4
Module Details.....	6
Module 1: Community Medicine .....	6
Module 2: Human Anatomy.....	8
Module 3: Physiology.....	10
Module 4: Pharmacology .....	12
Module 5: Microbiology.....	13
Module 6: Forensic Medicine .....	16
Module 7: Orthopedics .....	17
Module 8: Neuro-Surgery .....	20
Module 9: Burn & Plastic Surgery .....	22
Module 10: Anaesthesia .....	23
Module 11: Surgery.....	25
Module 12: Obstetrics & Gynaecology .....	28
Module 13: Employability Skills .....	30
Annexure.....	34
Trainer Requirements .....	34
Assessor Requirements.....	36
Assessment Strategy.....	37
References .....	39
Glossary.....	39
Acronyms and Abbreviations.....	40

## Training Parameters

<b>Sector</b>	Healthcare
<b>Sub-Sector</b>	Allied Health & Paramedics
<b>Occupation</b>	Emergency Care Services
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/5329.0101
<b>Minimum Educational Qualification and Experience</b>	12th class pass Or Completed 2nd year of 3-year diploma (after 10th) Or 10th grade pass with two years of any combination of NTC/NAC/CITS or equivalent Or NSQF Level 3: Dresser (Medical) with 3 years of relevant experience in healthcare setting Or NSQF Level 4: Emergency Care Assistant or Emergency Medical Technician-Basic or CSSD Assistant or Telehealth Services Coordinator
<b>Pre-Requisite License or Training</b>	Not Applicable
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	31/03/2022
<b>Next Review Date</b>	
<b>NSQC Approval Date</b>	03/05/2023
<b>QP Version</b>	1.0
<b>Model Curriculum Creation Date</b>	31/03/2022
<b>Model Curriculum Valid Up to Date</b>	03/05/2026
<b>Model Curriculum Version</b>	1.0

<b>Minimum Duration of the Course</b>	1500 Hours
<b>Maximum Duration of the Course</b>	1500 hours

## Program Overview

This section summarizes the end objectives of the program along with its duration.

### Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Describe about the healthcare sector and emergency medical care services.
- Perform skills of assessing the extent of injury, stabilizing the patient and striving to transfer the patient with appropriate care to the nearest trauma care facility within the 'Golden Hour' in emergency and accident situation.
- Demonstrate professional behavior, communication skills, personal attributes and characteristics of one's role and responsibilities.
- Follow infection control, sanitization, disinfection and bio medical waste protocols.

### Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>HSS/N2348: Orientation to Community Medicine, Human Anatomy, Physiology, Pharmacology, Microbiology and Forensic Medicine in the context of pre-hospital trauma care</b> NOS Version: 1.0 NSQF Level 4	120:00	105:00	00:00	00:00	225:00
<a href="#">Module 1: Community Medicine</a>	30:00	15:00	00:00	00:00	
<a href="#">Module 2: Human Anatomy</a>	18:00	30:00	00:00	00:00	
<a href="#">Module 3: Physiology</a>	23:00	15:00	00:00	00:00	

<a href="#">Module 4: Pharmacology</a>	25:00	15:00	00:00	00:00	
<a href="#">Module 5: Microbiology</a>	16:00	15:00	00:00	00:00	
<a href="#">Module 6: Forensic Medicine</a>	08:00	15:00	00:00	00:00	
<b>HSS/N2349: Orientation to Orthopedics, Neuro-Surgery and Burn &amp; Plastic Surgery in the context of pre-hospital trauma care NOS Version 1.0 NSQF Level 4</b>	<b>150:00</b>	<b>180:00</b>	<b>120:00</b>	<b>00:00</b>	<b>450:00</b>
<a href="#">Module 7: Orthopedics</a>	75:00	120:00	00:00	00:00	
<a href="#">Module 8: Neuro-Surgery</a>	35:00	30:00	00:00	00:00	
<a href="#">Module 9: Burn &amp; Plastic Surgery</a>	40:00	30:00	00:00	00:00	
<b>HSS/N2350: Orientation to Anaesthesia, Surgery and Obstetrics &amp; Gynecology in the context of pre-hospital trauma care NOS Version 1.0 NSQF Level 4</b>	<b>180:00</b>	<b>255:00</b>	<b>330:00</b>	<b>00:00</b>	<b>765:00</b>
<a href="#">Module 10: Anaesthesia</a>	90:00	150:00	00:00	00:00	
<a href="#">Module 11: Surgery</a>	75:00	60:00	00:00	00:00	
<a href="#">Module 12: Obstetrics &amp; Gynaecology</a>	15:00	45:00	00:00	00:00	
<b>Total</b>	<b>450:00</b>	<b>540:00</b>	<b>450:00</b>	<b>00:00</b>	<b>1440:00</b>
<b>Module 13: DGT/VSQ/N010 2 : Employability Skills (60 Hours)</b>	<b>60:00</b>	<b>00:00</b>	<b>00:00</b>	<b>00:00</b>	<b>60:00</b>
<b>Total Duration</b>	<b>510:00</b>	<b>540:00</b>	<b>450:00</b>	<b>00:00</b>	<b>1500:00</b>

# Module Details

## Module 1: Community Medicine

### Terminal Outcomes:

- Understand the epidemiology of trauma and get an overview of Trauma Care Systems in our country.

Duration: 45:00	Duration: 30:00
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Introduction to trauma</li> <li>• Epidemiology of trauma</li> <li>• Trauma — causes</li> <li>• Trauma systems — Components               <ul style="list-style-type: none"> <li>• Injury prevention</li> <li>• Pre-hospital care</li> <li>• Emergency department care</li> <li>• Inter facility Transportation</li> <li>• Trauma critical care</li> </ul> </li> <li>• Trauma systems — Trauma centers               <ul style="list-style-type: none"> <li>• Levels</li> <li>• Role</li> </ul> </li> <li>• Well-being of Trauma Care team</li> <li>• Social issues in Trauma</li> <li>• Protection of victims and bystanders</li> <li>• Personal safety</li> <li>• Managing violence</li> <li>• Civil disturbances</li> <li>• Mass casualty</li> <li>• Overview of the Programme ‘Capacity Building for developing Trauma Care Facilities in Government Hospitals on National Highways’</li> <li>• Overview of ambulances in India</li> </ul>	<ul style="list-style-type: none"> <li>• Motivational skills for management of trauma victims</li> <li>• Leadership training</li> <li>• Field situations and management issues</li> </ul>
<b>Classroom Aids:</b>	
Computer with internet, Video presentation	
<b>Tools, Equipment and Other Requirements</b>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> <li>• Respiratory Aids</li> </ul>	

- Transfusion equipment
- Splints / Collar, Spinal Board
- Catheter, Chest Tubes
- Tourniquet
- Models for practical training
- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)

## Module 2: Human Anatomy

### Terminal Outcomes:

- Acquire basic knowledge of the structure of human body in the context of pre-hospital trauma care
- Implement the knowledge of anatomy in common emergency conditions.

<b>Duration: 18:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe anatomy of following:               <ul style="list-style-type: none"> <li>• Upper Limb</li> <li>• Cubital fossa and its contents</li> <li>• Thorax</li> <li>• Heart</li> <li>• Anatomy of head and neck</li> <li>• Thyroid and other organs</li> <li>• Nervous system</li> <li>• Cerebral hemisphere</li> <li>• Meninges</li> <li>• Anatomy of abdomen</li> <li>• Organs of abdomen                   <ul style="list-style-type: none"> <li>• Liver</li> <li>• Spleen</li> <li>• Kidneys</li> </ul> </li> <li>• Pelvic organs and their support</li> <li>• Lower limb</li> <li>• Urogenital system</li> <li>• Eyeball</li> <li>• Ear, nose and throat</li> <li>• Surface marking of                   <ul style="list-style-type: none"> <li>• Head &amp; Neck</li> <li>• Brain</li> <li>• Upper limb</li> <li>• Lower limb</li> <li>• Thorax</li> <li>• Abdomen</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Practice anatomical features of following:               <ul style="list-style-type: none"> <li>• Skull &amp; Mandible</li> <li>• Interior of Skull</li> <li>• Vertebral Column</li> <li>• Bones of Upper Limb</li> <li>• Bones of Lower Limb</li> <li>• Pelvis</li> <li>• Head &amp; Neck</li> <li>• Temporo-mandibular region</li> <li>• Orbit</li> <li>• Thorax Bones</li> <li>• Lungs on specimen</li> <li>• Heart on specimen</li> <li>• Respiratory System</li> <li>• Heart &amp; Great vessels</li> <li>• Anatomy of abdomen &amp; location of organs</li> <li>• Liver &amp; Spleen</li> <li>• Kidney, Ureter &amp; Urinary Bladder</li> <li>• Brain</li> <li>• Spinal Cord &amp; Meninges</li> <li>• Surface marking on the cadaver</li> </ul> </li> </ul>
<b>Classroom Aids:</b>	
Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function	
<b>Tools, Equipment and Other Requirements</b>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> </ul>	



- Respiratory Aids
- Transfusion equipment
- Splints / Collar, Spinal Board
- Catheter, Chest Tubes
- Tourniquet
- Models for practical training
- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)

## Module 3: Physiology

### Terminal Outcomes:

- Acquire basic knowledge about various physiological functions of individual systems in the human body.

<b>Duration: 23:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Fluid &amp; electrolytes               <ul style="list-style-type: none"> <li>• Distribution of body fluids</li> <li>• Composition of body fluids</li> <li>• Disturbances in body fluids and electrolytes</li> </ul> </li> <li>• Blood               <ul style="list-style-type: none"> <li>• Blood: Composition and functions</li> <li>• Blood formation, fate of RBC &amp; Jaundice and Anemia</li> <li>• Blood Groups: Types, their importance &amp; Rh incompatibility</li> <li>• Hemostasis</li> <li>• Immunity and AIDS</li> </ul> </li> <li>• Circulatory System               <ul style="list-style-type: none"> <li>• Physiological Anatomy of CVS</li> <li>• Cardiac cycle, heart rate, heart sounds, ECG</li> <li>• Cardiac output, Venous return,</li> <li>• Blood Pressure: Definition, Normal Value, Regulation of Blood Pressure</li> <li>• Shock: Definition &amp; Different types</li> </ul> </li> <li>• Respiratory System               <ul style="list-style-type: none"> <li>• Physiological anatomy of respiratory system</li> <li>• Mechanism of respiration</li> <li>• Composition of air and transport of gases</li> <li>• Regulation of respiration (neural and chemical)</li> <li>• Applied — hypoxia and Airway obstructions</li> </ul> </li> <li>• Central Nervous System               <ul style="list-style-type: none"> <li>• Functional organization of CNS</li> <li>• Spinal injuries</li> </ul> </li> <li>• Endocrine System               <ul style="list-style-type: none"> <li>• Names &amp; Anatomical location of different endocrine Glands</li> <li>• Hormones secreted by each gland, their functions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration: Hemoglobin estimation and peripheral smear</li> <li>• General physical examination: Examination and observation of the following aspects:               <ul style="list-style-type: none"> <li>• General appearance, mental and emotional status</li> <li>• Physique, built and nutritional status</li> <li>• Facial expression and speech</li> <li>• Eyes, skin, feet, neck</li> <li>• Lymph nodes, pallor, icterus, edema, cynosis, nails, hair etc.</li> <li>• Pupillary examination including reflexes</li> </ul> </li> <li>• Clinical examination of the respiratory system: Inspection, palpation, percussion and auscultation of the respiratory system</li> <li>• Clinical examination of the cardiovascular system: Pulse, BP, Precordium</li> <li>• Recording of body temperature               <ul style="list-style-type: none"> <li>• Normal body temperature range</li> <li>• Apparatus used, method of measurement &amp; precautions</li> </ul> </li> <li>• Sensory system examination and motor system examination               <ul style="list-style-type: none"> <li>• Examination of the sensory system</li> <li>• Examination of motor system</li> </ul> </li> </ul>

<ul style="list-style-type: none"> <li>• Genitourinary System             <ul style="list-style-type: none"> <li>• Urinary System</li> <li>• Physiological anatomy</li> <li>• Function</li> <li>• Urine Composition</li> <li>• Electrolyte balance</li> </ul> </li> <li>• Temperature regulation             <ul style="list-style-type: none"> <li>• Normal body temperature: Core &amp; Oral</li> <li>• Heat Production &amp; heat loss</li> <li>• Regulating Mechanism for role of Hypothalamus</li> <li>• Applied for Fever, Hypothermia and heat stroke</li> </ul> </li> <li>• Patho-physiology of Pain             <ul style="list-style-type: none"> <li>• Definition of Pain</li> <li>• Types of pain: referred pain, slow pain, fast pain etc.</li> <li>• Pain Pathway</li> </ul> </li> </ul>	
<p><b>Classroom Aids:</b></p>	
<p>Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> <li>• Respiratory Aids</li> <li>• Transfusion equipment</li> <li>• Splints / Collar, Spinal Board</li> <li>• Catheter, Chest Tubes</li> <li>• Tourniquet</li> <li>• Models for practical training</li> <li>• Ambulance posting</li> <li>• Audio-Visual presentations of cases (CD, DVDs)</li> </ul>	

## Module 4: Pharmacology

### Terminal Outcomes:

- Acquire basic information about the drugs (including their adverse effects), relevant to trauma care that may be used while transporting the patient from the accident site to the healthcare facility / trauma care facility.

<b>Duration: 25:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Introduction of the subject, Routes of administration.</li> <li>• Pharmacokinetics, Pharmacodynamics, Adverse drug reactions of following:               <ul style="list-style-type: none"> <li>• Anticholinergic drugs</li> <li>• Vasopressor agents, Inotropic agents</li> <li>• Vasodilators</li> <li>• Drugs used in emergency treatment of Angina &amp; MI, Antiarrhythmics</li> <li>• Intravenous fluids — Crystalloids</li> <li>• Intravenous fluids — Colloids</li> <li>• Drugs used in treatment of shock</li> <li>• Drugs used in treatment of bronchial asthma</li> <li>• Local anaesthetics</li> <li>• Intravenous anaesthetics</li> <li>• Skeletal muscle relaxants</li> <li>• Sedative, Anxiolytic</li> <li>• Analgesics</li> <li>• Drugs used in Post-partum hemorrhage</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration of various emergency drugs</li> <li>• Demonstration of various types of IV fluids</li> <li>• Preparation of the IV drip</li> <li>• Drugs used in CPR with Case Study</li> </ul>
<b>Classroom Aids:</b>	
Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function	
<b>Tools, Equipment and Other Requirements</b>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> <li>• Respiratory Aids</li> <li>• Transfusion equipment</li> <li>• Splints / Collar, Spinal Board</li> <li>• Catheter, Chest Tubes</li> <li>• Tourniquet</li> <li>• Models for practical training</li> <li>• Ambulance posting</li> </ul>	

- Audio-Visual presentations of cases (CD, DVDs)

## Module 5: Microbiology

### Terminal Outcomes:

- Gain information on infectious diseases, various sterilization techniques, concept of wound infections, biomedical waste and occupational exposures in the pre-hospital trauma care.

<b>Duration: 16:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Introduction to infectious diseases               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Causes of infectious diseases</li> <li>• Mode of transmission of infectious diseases</li> <li>• Entry of infectious agents</li> <li>• Defenses against infectious diseases</li> <li>• Prevention from infectious diseases</li> </ul> </li> <li>• Blood borne pathogens               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Persons at risk</li> <li>• Pathogens</li> <li>• HBV</li> <li>• HCV</li> <li>• HIV</li> </ul> </li> <li>• Wound infections               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Principles of wound management</li> <li>• Prevention of wound infection</li> <li>• Tetanus</li> <li>• Gas gangrene.</li> </ul> </li> <li>• Biomedical Waste Management               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Definition of biomedical waste</li> <li>• Quantum of waste that is generated by a hospital</li> <li>• Hazard of biomedical waste</li> <li>• Persons at risk of the hazards of medical procedures</li> <li>• Rules and regulations governing the disposal of biomedical waste</li> <li>• Responsibilities of health care institutions regarding biomedical waste management</li> <li>• Categories of waste generated in hospitals and their management</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration of various sterilization equipment and procedures including visit to CSSD, autoclave room, incinerator.</li> <li>• Standard precautions and safety procedures.</li> <li>• Identification of components of PPE</li> <li>• Visit to HIV diagnostic center</li> <li>• Sample collection techniques and correct containers</li> <li>• Case studies:               <ul style="list-style-type: none"> <li>• Infection control</li> <li>• Biomedical Waste management</li> <li>• Sterilization and disinfection</li> <li>• Wound infections</li> </ul> </li> </ul>

<ul style="list-style-type: none"> <li>• Color codes and type of containers used for disposal of biomedical waste</li> <li>• Disposal of infectious waste</li> <li>• Disposal of sharps</li> <li>• Storage of bio medical waste in hospital</li> <li>• Recyclable waste</li> <li>• Sterilization and Disinfection             <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Definitions</li> <li>• Physical methods to achieve sterilization and disinfection</li> <li>• Properties of disinfectants</li> <li>• Classification of disinfectants</li> <li>• Chlorine as high level disinfectant</li> <li>• Preparation of working solution of sodium hypochlorite</li> <li>• Sterilization of common hospital instruments</li> <li>• Common Precautions for disinfection</li> </ul> </li> <li>• Bio-safety and standard precautions             <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Bio-safety</li> <li>• Standard precautions</li> <li>• Waste disposal</li> <li>• Occupational exposure</li> <li>• Factors Influencing Occupational Risk of Blood borne Virus Infection</li> <li>• Preventing transmission of Blood borne Viruses in Healthcare Settings</li> <li>• Definition of exposure</li> <li>• Workplace exposure</li> <li>• Post exposure prophylaxis</li> <li>• PEP for HIV as per NACO guidelines</li> <li>• PEP following exposure to HBV patient</li> </ul> </li> </ul>	
<p><b>Classroom Aids:</b></p>	
<p>Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> <li>• Respiratory Aids</li> <li>• Transfusion equipment</li> <li>• Splints / Collar, Spinal Board</li> </ul>	

- Catheter, Chest Tubes
- Tourniquet
- Models for practical training
- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)

## Module 6: Forensic Medicine

### Terminal Outcomes:

- Orientation on the legal and ethical issues concerning professional practice and aspects on notifications and documentation related to Pre-hospital Trauma care.

<b>Duration: 08:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Professional practice and ethical issues concerning pre-hospital trauma assistants.</li> <li>• Role of trauma technician in documentation.</li> <li>• Issues related to identification.</li> <li>• Medico-legal issues in trauma.</li> <li>• Medico-legal issues in Asphyxia.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration of documentation of report, recording of findings using MLC case records, Post-mortem reports, Age reports.</li> <li>• Demonstration of injuries using various museum specimens and weapons.</li> <li>• Demonstration of injuries on autopsy examination.</li> <li>• Demonstration of issues related to identification on autopsy.</li> <li>• Demonstration of practical aspects of asphyxia cases: Preservation of knot of ligature material etc.</li> <li>• Demonstration of practical aspects of asphyxia on autopsy.</li> </ul>
<b>Classroom Aids:</b>	
Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function	
<b>Tools, Equipment and Other Requirements</b>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> <li>• Respiratory Aids</li> <li>• Transfusion equipment</li> <li>• Splints / Collar, Spinal Board</li> <li>• Catheter, Chest Tubes</li> <li>• Tourniquet</li> <li>• Models for practical training</li> <li>• Ambulance posting</li> <li>• Audio-Visual presentations of cases (CD, DVDs)</li> </ul>	



## Module 7: Orthopedics

### Terminal Outcomes:

- Acquaint with the basic knowledge of orthopaedic trauma and its management.
- Acquire basic information on fractures, soft tissue injuries, amputations and their management during pre-hospital trauma care.
- Implement immobilization techniques, patient transfers, on and off field skills in the pre-hospital trauma care.

Duration: 75:00	Duration: 120:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Spinal Injury               <ul style="list-style-type: none"> <li>• Introduction:- Procedure, problems, Increasing rate of Injury, Social &amp; Country Burden</li> <li>• Diagram of Vertebral Column with Spinal Cord &amp; Nerve</li> <li>• Patho-physiology of S.C. Injury</li> <li>• Mode of Injury</li> <li>• Clinical features</li> <li>• Complete &amp; Incomplete Injury</li> <li>• Management:- A team approach                   <ul style="list-style-type: none"> <li>• Pre-Hospital Management</li> <li>• Hospital Management</li> </ul> </li> </ul> </li> <li>• Cervical Spine Injury</li> <li>• Dorsal Spine Injury</li> <li>• Lumbar Spine Injury</li> <li>• Pre-hospital management</li> <li>• Hospital Management</li> <li>• Other Investigations &amp; conservative treatment</li> <li>• Operative treatment and rehabilitation</li> <li>• Orthopaedics-(traumatology)               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Prevalence of trauma</li> <li>• Mode of trauma and injury</li> <li>• Role of prime responders</li> <li>• Importance of first aid</li> <li>• Limitation of trauma Technician</li> </ul> </li> <li>• Soft tissue injury (Muscle, tendon, skin) Spasm/Tear/Laceration</li> <li>• Bone Injury:- Fracture — definition, Clinical Features, Types of fracture</li> <li>• Injury to Joint               <ul style="list-style-type: none"> <li>• Ligament Sprain/Strain</li> <li>• Dislocation &amp; subluxation</li> </ul> </li> <li>• Injury to Nerves &amp; Vessels</li> </ul>	<ul style="list-style-type: none"> <li>• Brief round of the Orthopaedics dept. and set up</li> <li>• Dressing Bandaging</li> <li>• Crape bandaging               <ul style="list-style-type: none"> <li>• Strapping</li> <li>• Types (chest, for clavicle, ribs, fingers, toes, etc.)</li> </ul> </li> <li>• Dressings (for simple and severe wound) Its principle, technique, importance of no —touch technique, material, ointments, instruments etc.</li> <li>• Dressing of fresh cut injury</li> <li>• Stitches and suturing, suture materials</li> <li>• Crush Injury               <ul style="list-style-type: none"> <li>• Methods of controlling bleeding, pressure, limb elevation, haemostasis, use of artery forceps, knots etc.</li> </ul> </li> <li>• Splintage of Upper Limb               <ul style="list-style-type: none"> <li>• Types and uses</li> <li>• POP-slab, cast, its nomenclature</li> </ul> </li> <li>• Splintage of Lower Limb               <ul style="list-style-type: none"> <li>• Types and uses</li> <li>• POP-slab, cast, its nomenclature</li> </ul> </li> <li>• Other splints- Readymade-crammer wires, malleable splints Thomas splint and bohlersbraun splint</li> <li>• Traction</li> <li>• Orthosis and prosthesis               <ul style="list-style-type: none"> <li>• Spine board/stretcher/wheel chair/ crutches</li> </ul> </li> <li>• Fracture reduction and reduction of dislocation-Upper Limb: principle, types and demonstration</li> </ul>

<ul style="list-style-type: none"> <li>• Soft Tissue Injury (STI) upper limb             <ul style="list-style-type: none"> <li>• Clinical features</li> <li>• Diagnosis — r/o fracture Treatment</li> <li>• Pre-hospital management</li> </ul> </li> <li>• SoftTissueInjury-lower limb</li> <li>• Injury to Major Blood Vessels             <ul style="list-style-type: none"> <li>• General introduction</li> <li>• Type of lesion</li> <li>• Clinical features :- Open injury, close Injury</li> <li>• Diagnosis</li> <li>• Treatment</li> </ul> </li> <li>• Vascular injury to upper limb (Pre-hospital management)</li> <li>• Vascular injury to lower limb &amp; Pelvic region</li> <li>• Nerve injury of upper limb</li> <li>• Nerve Injury of lower limb</li> <li>• Fracture healing</li> <li>• Complication of fracture</li> <li>• Principle of fracture Management             <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Causes of fracture</li> <li>• Assessment                 <ul style="list-style-type: none"> <li>○ Pre hospital Management</li> <li>○ Hospital Management</li> </ul> </li> </ul> </li> <li>• Injury to joints</li> <li>• Dislocation of lower limb joints</li> <li>• Dislocation of upper limb joints</li> <li>• Fracture of pelvis, and lower limb bones</li> <li>• Fracture of scapula, clavicle and upper limb bones</li> <li>• Open fractures —             <ul style="list-style-type: none"> <li>• Pre hospital Management</li> <li>• Hospital Management</li> </ul> </li> <li>• Splints and their uses</li> <li>• Compartment Syndrome</li> <li>• Traumatic Amputation</li> <li>• Re-implantation surgery             <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Methods-transportation,</li> <li>• Rehabilitation —its role</li> </ul> </li> <li>• Management of Trauma Amputation:- (Arm/Forearm/Tibia/Thigh)             <ul style="list-style-type: none"> <li>• Pre — hospital management</li> <li>• Hospital management</li> </ul> </li> <li>• Pelvis Injury</li> <li>• Fractures in the Elderly</li> <li>• Fracture rib</li> </ul>	<ul style="list-style-type: none"> <li>• Fracture reduction and reduction of dislocation-Lower Limb: principle, types and demonstration</li> <li>• Demonstration of bed making, injection, traction, posture, shifting of spine patient and other, etc.</li> <li>• Tourniquet-             <ul style="list-style-type: none"> <li>• Principle and its role</li> <li>• Application</li> <li>• Complication</li> </ul> </li> <li>• Emergency orthopedics theatre (EOT) of OT area             <ul style="list-style-type: none"> <li>• Set-up</li> <li>• Sterilization methods, ortho implants and fixators</li> <li>• Demonstration of common operative procedures: Dressings, fixates, k-wire fixation</li> </ul> </li> </ul>
<p><b>Classroom Aids:</b></p>	

Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function

**Tools, Equipment and Other Requirements**

- CPR Dummy
- Intubation mannikin
- IV line mannikin
- Different types of Airway management equipments.
- Audio-Visual presentations of various trauma cases.
- Ambulances-transport ambulance-BLS, ACLS
- Projector / LCD
- Ambu Bag
- Respiratory Aids
- Transfusion equipment
- Splints / Collar, Spinal Board
- Catheter, Chest Tubes
- Tourniquet
- Models for practical training
- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)

## Module 8: Neuro-Surgery

### Terminal Outcomes:

- Acquaint with the basic knowledge of spinal injuries and its management.
- Acquaint with the detailed information on various etiologies, patho-physiology and management aspects for head injury patients in the pre-hospital trauma care.

<b>Duration: 35:00</b>	<b>Duration: 30:00</b>
<p><b>Theory – Key Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>• Anatomy of skull and vertebral column</li> <li>• Anatomy of brain, spinal, peripheral nerves</li> <li>• Physiology of central and autonomic nervous system</li> <li>• Etiology and patho-physiology of head injury</li> <li>• Patho-physiology of spinal injury</li> <li>• Identification of head and spinal injury and associated injuries</li> <li>• Raised intracranial pressure and spinal shock</li> <li>• Status epilepticus and its management</li> <li>• Emergency drugs used in head and spinal injury</li> <li>• Glasgow coma scale</li> <li>• Haemostasis, DIC and deep vein thrombosis</li> <li>• Recognition of head trauma from stroke and other medical problem in an unconscious person found roadside</li> <li>• Do and don't in head and spinal injury</li> <li>• Indication for hospitalization and transfer to appropriate trauma centre and first aid</li> <li>• Emergency investigations in head and spinal injury</li> </ul>	<p><b>Practical – Key Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>• Practical demonstration of head bandages, position of patient, airway management</li> <li>• Various spinal stabilization techniques</li> <li>• Case of head injury: Presentation, examination and assessment of head injury patient</li> <li>• Case of spinal injury: Presentation, examination and assessment of spinal injury patient</li> <li>• How to minimize secondary brain and spinal damage</li> <li>• Management of skull wounds, ENT bleed and CSF leak</li> <li>• Management of penetrating injury and firearm injury of head and vertebral column</li> <li>• Management of head injury in children and elderly patients</li> <li>• Monitoring of a head injury patient during transfer.</li> </ul>
<p><b>Classroom Aids:</b></p> <p>Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function</p>	
<p><b>Tools, Equipment and Other Requirements</b></p> <ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> <li>• Respiratory Aids</li> <li>• Transfusion equipment</li> <li>• Splints / Collar, Spinal Board</li> <li>• Catheter, Chest Tubes</li> <li>• Tourniquet</li> <li>• Models for practical training</li> </ul>	

- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)

## Module 9: Burn & Plastic Surgery

### Terminal Outcomes:

- Understand the emergencies related to plastic surgery including Burns, Maxillofacial Injury and Soft tissue injury

<b>Duration: 40:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Causes, classification, clinical features of different burns &amp; degrees</li> <li>• Pre-hospital management &amp; Transport</li> <li>• Prevention of burns</li> <li>• Maxillofacial Injury</li> <li>• Care during transport</li> <li>• General Principles in pre-hospital management</li> <li>• Basic Anatomy on soft tissue injuries</li> <li>• Splints &amp; bandaging — general importance</li> <li>• Assessment of the soft tissue wound</li> </ul>	<ul style="list-style-type: none"> <li>• FirstAid : Thermal Burn</li> <li>• First Aid : Inhalational Burn</li> <li>• First Aid in Chemical burn</li> <li>• Radiation Burns</li> <li>• First Aid in electrical Burns</li> <li>• Pediatric Burns</li> <li>• Geriatric Burns</li> <li>• Disaster management/Mass casualty (Diwali festivities)</li> <li>• Maxillofacial Injury: First Aid</li> <li>• First aid of soft tissue wounds</li> <li>• Establishing the IV access</li> <li>• Splints &amp; bandaging</li> </ul>
<b>Classroom Aids:</b>	
Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function	
<b>Tools, Equipment and Other Requirements</b>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> <li>• Respiratory Aids</li> <li>• Transfusion equipment</li> <li>• Splints / Collar, Spinal Board</li> <li>• Catheter, Chest Tubes</li> <li>• Tourniquet</li> <li>• Models for practical training</li> <li>• Ambulance posting</li> <li>• Audio-Visual presentations of cases (CD, DVDs)</li> </ul>	

## Module 10: Anaesthesia

### Terminal Outcomes:

- Acquire general introduction on cardio-pulmonary resuscitation, various equipments used and procedures done including normal ECG & common ECG abnormalities, and managing trauma victim by oxygen therapy, IV fluids, blood transfusion.

<b>Duration: 90:00</b>	<b>Duration: 150:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>Normal ECG rhythms</li> <li>Abnormal ECG               <ul style="list-style-type: none"> <li>Sinus bradycardia</li> <li>Sinus tachycardia</li> <li>Pulseless ventricular tachycardia</li> <li>Ventricular fibrillation</li> <li>Asystole</li> <li>Pulseless electrical activity</li> </ul> </li> <li>Monitoring               <ul style="list-style-type: none"> <li>ECG</li> <li>NIBP</li> <li>Pulse oxymetry</li> <li>ETCO<sub>2</sub></li> <li>Temperature</li> <li>Oxygen Therapy</li> </ul> </li> <li>Different types of shock especially hypovolemic shock</li> <li>IV Fluids — Crystalloids and colloids</li> <li>Blood transfusion and complication</li> <li>CPR including techniques and devices</li> <li>Management of acute coronary syndrome</li> <li>Adult BLS and pre-hospital trauma services systems (PTS)</li> <li>ACLS and Post Resuscitation support:               <ul style="list-style-type: none"> <li>Electrical therapies</li> <li>Defibrillation</li> <li>Cardioversion</li> <li>Pacing</li> </ul> </li> <li>Paediatric BLS</li> <li>Neonatal BLS</li> <li>Hypothermia/Hyperthermia</li> <li>Drowning</li> </ul>	<ul style="list-style-type: none"> <li>Thermometer, stethoscope, BP instrument, oro- pharyngeal airway</li> <li>Measurement of Blood Pressure</li> <li>Face-mask, LMA, Endotracheal tube, laryngoscope</li> <li>Suction machine, suction catheter</li> <li>Transport &amp; ICU ventilator</li> <li>Monitor &amp; defibrillator</li> <li>ECG, NIBP, capnography, pulse oxymeter</li> <li>Medical gas cylinder, syringe and infusion pumps</li> <li>Start of IV line and care- fixation, preparation of IV line</li> <li>Maintenance of airway using triple airway manoeuvre and CPR</li> <li>Insertion of LMA</li> <li>Intubation</li> <li>Crico-thyroidotomy/ tracheostomy (demonstration only)</li> <li>set up the vital sign monitor on the patient.</li> <li>take 12 lead ECG strip</li> <li>Setting-up of a ventilator</li> <li>Use of nebulizer and humidification</li> <li>Insertion of chest tube (demonstration only)</li> <li>Needle evacuation of tension pneumothorax</li> <li>Urinary catheterization</li> </ul>
<b>Classroom Aids:</b>	
Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function	
<b>Tools, Equipment and Other Requirements</b>	

- CPR Dummy
- Intubation mannikin
- IV line mannikin
- Different types of Airway management equipments.
- Audio-Visual presentations of various trauma cases.
- Ambulances-transport ambulance-BLS, ACLS
- Projector / LCD
- Ambu Bag
- Respiratory Aids
- Transfusion equipment
- Splints / Collar, Spinal Board
- Catheter, Chest Tubes
- Tourniquet
- Models for practical training
- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)



## Module 11: Surgery

### Terminal Outcomes:

- Gain in-depth knowledge of various types of trauma and first aid measures to be taken during pre-hospital trauma care.
- Understand the concept of triage and the importance of 'Golden Hour'.
- Acquire the detailed knowledge of the patient assessment, examination and recording of patient details.
- Gain information on hemorrhage, shock, chest and abdominal injuries and their management aspects in pre-hospital trauma settings.

Duration: 75:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Pre hospital trauma care-               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Primary objective</li> </ul> </li> <li>• Golden hour-               <ul style="list-style-type: none"> <li>• Airway management</li> <li>• Control of excessive bleeding</li> <li>• Initial management of shock</li> </ul> </li> <li>• Shock:               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Types</li> <li>• Clinical Feature</li> <li>• Hypovolemic Shock</li> <li>• Traumatic shock</li> <li>• Burn shock</li> <li>• Management</li> </ul> </li> <li>• Head Injury:               <ul style="list-style-type: none"> <li>• General evaluation</li> <li>• Mechanism of injury</li> <li>• Cardio-respiratory status of the patient</li> <li>• Assessment of motor response</li> <li>• Pupil size and reaction of light</li> <li>• Glassgow coma scale</li> </ul> </li> <li>• Spine and spinal cord injury:               <ul style="list-style-type: none"> <li>• Basic anatomy and physiology</li> <li>• Initial evaluation of a patient with suspected spinal injury</li> </ul> </li> <li>• Musculoskeletal trauma:               <ul style="list-style-type: none"> <li>• Significance in a multiple injuries patient</li> <li>• Recognition of life and limb threatening injuries</li> <li>• Initial management and # immobilization</li> <li>• Major arterial hemorrhage</li> <li>• Crush injury and crush syndrome</li> <li>• Compartment syndrome</li> </ul> </li> <li>• Chest trauma</li> </ul>	<ul style="list-style-type: none"> <li>• Golden hour-               <ul style="list-style-type: none"> <li>• Airway management</li> <li>• Control of external bleeding</li> <li>• Initial management of shock</li> </ul> </li> <li>• Shock:               <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Types</li> <li>• Clinical Feature</li> <li>• Hypovolemic Shock</li> <li>• Traumatic shock</li> <li>• Burn shock</li> <li>• Management</li> </ul> </li> <li>• Head Injury:               <ul style="list-style-type: none"> <li>• General evaluation</li> <li>• Mechanism of injury</li> <li>• Cardio-respiratory status of the patient</li> <li>• Assessment of motor response</li> <li>• Pupil size and reaction of light</li> <li>• Glassgow coma scale</li> </ul> </li> <li>• Spine and spinal cord injury:               <ul style="list-style-type: none"> <li>• Basic anatomy and physiology</li> <li>• Initial evaluation of a patient with suspected spinal injury</li> </ul> </li> <li>• Musculoskeletal trauma:               <ul style="list-style-type: none"> <li>• Significance in a multiple injuries patient</li> <li>• Recognition of life and limb threatening injuries</li> <li>• Initial management and # immobilization</li> <li>• Major arterial hemorrhage</li> <li>• Crush injury and crush syndrome</li> <li>• Compartment syndrome</li> </ul> </li> <li>• Chest trauma</li> </ul>

<ul style="list-style-type: none"> <li>• Identification of life threatening injuries</li> <li>• Airway obstruction</li> <li>• Open pneumothorax</li> <li>• Tension pneumothorax</li> <li>• Flail chest</li> <li>• Cardiac tamponade</li> <li>• Massive hemothorax</li> <li>• Significance of subcutaneous emphysema</li> <li>• Abdominal and pelvic trauma:             <ul style="list-style-type: none"> <li>• Anatomy of abdomen</li> <li>• Solid organ in abdominal cavity</li> <li>• Blunt trauma abdomen</li> <li>• Penetrating trauma</li> <li>• Short term management</li> <li>• Pelvic # and associated injury</li> </ul> </li> <li>• Pediatric trauma:             <ul style="list-style-type: none"> <li>• Unique characteristics of the child as trauma patient</li> <li>• Anatomy and physiological differences</li> <li>• Child abuse</li> </ul> </li> <li>• Geriatric trauma:             <ul style="list-style-type: none"> <li>• Unique requirements and characteristics of elderly trauma patients</li> </ul> </li> <li>• Biomechanics of injury:             <ul style="list-style-type: none"> <li>• Blunt trauma</li> <li>• Penetrating trauma</li> <li>• Low energy- Knife</li> <li>• Medium energy- Guns</li> <li>• High energy- Military rifles</li> <li>• Blast injury</li> </ul> </li> <li>• Environmental extremes of heat and cold:             <ul style="list-style-type: none"> <li>• Cold injury and hypothermia</li> <li>• Heat related illness</li> <li>• Heat exhaustion</li> <li>• Heat stroke</li> </ul> </li> <li>• Mass Casualty             <ul style="list-style-type: none"> <li>• Mass Casualty event</li> <li>• Mass Casualty incident</li> </ul> </li> <li>• Triage             <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Objectives</li> <li>• Level of triage</li> <li>• Goal of triage</li> <li>• Function of triage</li> </ul> </li> <li>• Common surgical instrument</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of life threatening injuries</li> <li>• Airway obstruction</li> <li>• Open pneumothorax</li> <li>• Tension pneumothorax</li> <li>• Flail chest</li> <li>• Cardiac tamponade</li> <li>• Massive hemothorax</li> <li>• Significance of subcutaneous emphysema</li> <li>• Abdominal and pelvic trauma:             <ul style="list-style-type: none"> <li>• Anatomy of abdomen</li> <li>• Solid organ in abdominal cavity</li> <li>• Blunt trauma abdomen</li> <li>• Penetrating trauma</li> <li>• Short term management</li> <li>• Pelvic # and associated injury</li> </ul> </li> <li>• Mass Casualty             <ul style="list-style-type: none"> <li>• Mass Casualty event</li> <li>• Mass Casualty incident</li> </ul> </li> <li>• Triage             <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Objectives</li> <li>• Level of triage</li> <li>• Goal of triage</li> <li>• Function of triage</li> </ul> </li> <li>• Common surgical instrument</li> </ul>
<p><b>Classroom Aids:</b></p>	
<p>Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	

- CPR Dummy
- Intubation mannikin
- IV line mannikin
- Different types of Airway management equipments.
- Audio-Visual presentations of various trauma cases.
- Ambulances-transport ambulance-BLS, ACLS
- Projector / LCD
- Ambu Bag
- Respiratory Aids
- Transfusion equipment
- Splints / Collar, Spinal Board
- Catheter, Chest Tubes
- Tourniquet
- Models for practical training
- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)

## Module 12: Obstetrics & Gynaecology

### Terminal Outcomes:

- Orient students on the concepts of basic obstetric care and reproductive tract anatomy and physiology, various type of trauma involving female genital tract and Obstetrical patient, and first aid measures to be followed in such circumstances.

<b>Duration: 30:00</b>	<b>Duration: 60:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Anatomy and Physiology of female reproductive tract               <ul style="list-style-type: none"> <li>• Reproductive organs &amp; their functioning</li> </ul> </li> <li>• Normal Pregnancy               <ul style="list-style-type: none"> <li>• Diagnosis of pregnancy</li> <li>• Examination of pregnant woman</li> </ul> </li> <li>• Normal Labor and its stages               <ul style="list-style-type: none"> <li>• Onset and three stages of labor</li> <li>• Conduct of Delivery</li> <li>• Steps of conduct of normal delivery</li> <li>• Video presentation on conduct of normal delivery</li> </ul> </li> <li>• Preterm labor and Premature Rupture of Membranes (PROM)</li> <li>• Special consideration. How the management differs from Normal labor</li> <li>• Neonatal Resuscitation</li> <li>• Bleeding during pregnancy -               <ul style="list-style-type: none"> <li>• Abortions</li> <li>• Abruptio placenta</li> <li>• Rupture Uterus</li> </ul> </li> <li>• Management of delivered women               <ul style="list-style-type: none"> <li>• Care of mother and new born baby</li> <li>• Post Partum Hemorrhage</li> </ul> </li> <li>• Genital Tract Trauma               <ul style="list-style-type: none"> <li>• Types of injury</li> <li>• Management</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Identification of Organs of Female Reproductive Tract on ZOES model and specimens</li> <li>• Examination of non-pregnant and pregnant woman</li> <li>• Demonstration of labor kit</li> <li>• Demonstration of Normal Delivery in labor room</li> <li>• Observe &amp; assist normal delivery</li> <li>• Demonstrate the ability to perform a comprehensive assessment on Obstetric patients.</li> <li>• Observe &amp; assist during Gynae Emergency:               <ul style="list-style-type: none"> <li>• Abortions</li> <li>• Obstetrical Emergencies</li> <li>• Genital Tract Trauma</li> <li>• Sexual Assault cases</li> <li>• Obstetrical shock</li> <li>• Ethics, Medico legal issues</li> </ul> </li> </ul>
<b>Classroom Aids:</b>	
Charts, Models, Video presentation, Flip Chart, White-Board/Smart Board, Marker, Duster, AV Aids for Understanding Human Body Structure and Function	
<b>Tools, Equipment and Other Requirements</b>	
<ul style="list-style-type: none"> <li>• CPR Dummy</li> <li>• Intubation mannikin</li> <li>• IV line mannikin</li> <li>• Different types of Airway management equipments.</li> <li>• Audio-Visual presentations of various trauma cases.</li> <li>• Ambulances-transport ambulance-BLS, ACLS</li> <li>• Projector / LCD</li> <li>• Ambu Bag</li> </ul>	

- Respiratory Aids
- Transfusion equipment
- Splints / Collar, Spinal Board
- Catheter, Chest Tubes
- Tourniquet
- Models for practical training
- Ambulance posting
- Audio-Visual presentations of cases (CD, DVDs)

## Module 13: Employability Skills

Mandatory Duration: 60:00			
Location: On-Site			
S.No.	Module Name	Key Learning Outcomes	Duration (hours)
1.	Introduction to Employability Skills	<ul style="list-style-type: none"> <li>Discuss the Employability Skills required for jobs in various industries.</li> <li>List different learning and employability related GOI and private portals and their usage.</li> </ul>	1.5
2.	Constitutional values - Citizenship	<ul style="list-style-type: none"> <li>Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen.</li> <li>Show how to practice different environmentally sustainable practices.</li> </ul>	1.5
3.	Becoming a Professional in the 21st Century	<ul style="list-style-type: none"> <li>Discuss importance of relevant 21st century skills.</li> <li>Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.</li> <li>Describe the benefits of continuous learning.</li> </ul>	2.5
4.	Basic English Skills	<ul style="list-style-type: none"> <li>Show how to use basic English sentences for every day. conversation in different contexts, in person and over the telephone.</li> <li>Read and interpret text written in basic English</li> <li>Write a short note/paragraph / letter/e-mail using basic English.</li> </ul>	10
5.	Career Development & Goal Setting	<ul style="list-style-type: none"> <li>Create a career development plan with well-defined short- and long-term goals.</li> </ul>	2
6.	Communication Skills	<ul style="list-style-type: none"> <li>Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.</li> <li>Explain the importance of active listening for effective communication.</li> <li>Discuss the significance of working collaboratively with others in a team.</li> </ul>	5

7.	Diversity & Inclusion	<ul style="list-style-type: none"> <li>• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD.</li> <li>• Discuss the significance of escalating sexual harassment issues as per POSH act.</li> </ul>	2.5
8.	Financial and Legal Literacy	<ul style="list-style-type: none"> <li>• Outline the importance of selecting the right financial institution, product, and service.</li> <li>• Demonstrate how to carry out offline and online financial transactions, safely and securely.</li> <li>• List the common components of salary and compute</li> </ul>	5
		<p>income, expenditure, taxes, investments etc.</p> <ul style="list-style-type: none"> <li>• Discuss the legal rights, laws, and aids.</li> </ul>	
9.	Essential Digital Skills	<ul style="list-style-type: none"> <li>• Describe the role of digital technology in today's life.</li> <li>• Demonstrate how to operate digital devices and use the associated applications and features, safely and securely.</li> <li>• Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely.</li> <li>• Create sample word documents, excel sheets and presentations using basic features.</li> <li>• Utilize virtual collaboration tools to work effectively.</li> </ul>	10
10.	Entrepreneurship	<ul style="list-style-type: none"> <li>• Explain the types of entrepreneurship and enterprises.</li> <li>• Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan.</li> <li>• Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement.</li> <li>• Create a sample business plan, for the selected business opportunity.</li> </ul>	7
11	Customer Service	<ul style="list-style-type: none"> <li>• Describe the significance of analyzing different types and needs of customers.</li> <li>• Explain the significance of identifying customer needs and responding to them in a professional manner.</li> <li>• Discuss the significance of maintaining hygiene and dressing appropriately.</li> </ul>	5

12	Getting Ready for Apprenticeship & Jobs	<ul style="list-style-type: none"> <li>• Create a professional Curriculum Vitae (CV).</li> <li>• Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively.</li> <li>• Discuss the significance of maintaining hygiene and confidence during an interview.</li> <li>• Perform a mock interview.</li> <li>• List the steps for searching and registering for apprenticeship opportunities.</li> </ul>	8
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**LIST OF TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS**

S No.	Name of the Equipment	Quantity
1.	Computer (PC) with latest configurations - and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below)	As required
2.	UPS	As required
3.	Scanner cum Printer	As required
4.	Computer Tables	As required
5.	Computer Chairs	As required
6.	LCD Projector	As required
7.	White Board 1200mm x 900mm	As required
<i>Note: Above Tools &amp; Equipment not required, if Computer LAB is available in the institute.</i>		



**Mandatory Duration: 450:00**

**Recommended Duration: 00:00**

**Module Name: On-the-Job Training**

**Location: In state and central Government Hospitals, Multi-specialty Hospitals with attached ambulance services**

- Main Casualty
  - Main treatment & Resuscitation area (2 weeks)
  - Dressing Room (2 weeks)
  - Injection Room (1 week)
- Anaesthesia (2 Wks.)
- Orthopaedic Plaster Room & EOT (2 Wks.)
- Burns Department Casualty (1 Wk)
- Trauma Centre (2 Wks)
- Ambulance (1 Wk)

**Terminal Outcomes**

- CPR, Bag Mask/Ambu Bag ventilation. Defibrillation, Monitoring.
- Establishment of circulatory access, putting up of IV line/ Cannula. Maintenance of airway:
- Oral airway, Oro tracheal, Endo tracheal intubation Cricothyrotomy.
- Manual removal of foreign Body from throat Oropharyngeal suction method.
- Ryles tube insertion and Gastric lavage method.
- Control of bleeding-methods (manual, pressure dressing). Care of unconscious patient due to trauma.
- Wound dressings.
- Splinting of limbs for fractures.
- Immobilization method in Neck/Cervical trauma.
- Intramuscular Injection/Intravascular Injection (under supervision of a Doctor).
- Management of shock- first aid measures.

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Post-graduate (recognized system of modern medicine)		1				HOD/ Sr. Faculty Member of Anaesthesia/ Surgery/ Orthopaedics should be the Nodal person/ Supervisor of the program
Medical Graduate		4		1		Junior or Senior residents working in departments (Anaesthesia/ Surgery/ Orthopaedics/ Neuro Surgery / Burns & Plastic/PSM/Anatomy/Physiology/Pharmacology/ Microbiology/Forensic Medicine/ Obs & Gynae) should be teaching faculty
M.Sc.	Nursing	4		2		working in departments (Anaesthesia/ Surgery/ Orthopaedics/ Neuro Surgery / Burns & Plastic/PSM/Anatomy/Physiology/Pharmacology/ Microbiology/Forensic Medicine/ Obs & Gynae) should support in training
B.Sc.	Emergency Medical Technician	5		2		As a Supporting Faculty

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Pre-Hospital Trauma Assistant" mapped to QP: "HSS/Q2305 v1.0" with minimum score of 80%.	Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the

	Qualification Pack: “MEP/Q2601, v2.0” with minimum score of 80%.
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## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Post-graduate (recognized system of modern medicine)		1				HOD/ Sr. Faculty Member of Anaesthesia/ Surgery/ Orthopaedics should be the Nodal person/Supervisor of the program
Medical Graduate		4		1		Junior or Senior residents working in departments (Anaesthesia/ Surgery/ Orthopaedics/ Neuro Surgery / Burns & Plastic/PSM/Anatomy/Physiology/Pharmacology/ Microbiology/Forensic Medicine/ Obs & Gynae)
M.Sc.	Nursing	4		2		working in departments (Anaesthesia/ Surgery/ Orthopaedics/ Neuro Surgery / Burns & Plastic/PSM/Anatomy/Physiology/Pharmacology/ Microbiology/Forensic Medicine/ Obs & Gynae)

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Pre-Hospital Trauma Assistant” mapped to QP: “HSS/Q2305 v1.0” with minimum score of 80%.	Recommended that the Assessor is certified for the Job Role: “Assessor (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0” with minimum score of 80%.

## Assessment Strategy

The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria. Accordingly, assessment criteria for each job role is set and made available in qualification pack.

The assessment papers for both theory and practical would be developed by Subject Matter Experts (SME) hired by Healthcare Sector Skill Council or with the HSSC accredited Assessment Agency as per the assessment criteria mentioned in the Qualification Pack. The assessments papers would also be checked for the various outcome-based parameters such as quality, time taken, precision, tools & equipment requirement etc.

Each NOS in the Qualification Pack (QP) is assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Element/Performance Criteria in the NOS is assigned marks on relative importance, criticality of function and training infrastructure.

The On the Job (OJT) training component, which is a mandatory part of the training, done by the candidate at a healthcare organization has to be appropriately captured as per OJT log book framework. This shall be assessed and would carry the weightage during final assessment done by HSSC as per assessment strategy defined for COVID Frontline Worker (Medical Equipment Support).

The following tools would be used for final assessment:

**1. Practical Assessment:** This comprises of a creation of mock environment in the skill lab which is equipped with all equipment required for the qualification pack.

Candidate's soft skills, communication, aptitude, safety consciousness, quality consciousness etc. is ascertained by observation and marked in observation checklist. The outcome is measured against the specified dimensions and standards to gauge the level of their skill achievements.

**2. Viva/Structured Interview:** This tool is used to assess the conceptual understanding and the behavioral aspects with regard to the job role and the specific task at hand. It also includes questions on safety, quality, environment and equipment etc.

**3. Written Test:** Question paper consisting of 100 MCQs (Hard:40, Medium:30 and Easy: 30) with questions from each element of each NOS. The written assessment paper is comprised of following types of questions:

- i. True / False Statements
- ii. Multiple Choice Questions
- iii. Matching Type Questions.
- iv. Fill in the blanks
- v. Scenario based Questions
- vi. Identification Questions

### QA Regarding Assessors:

Assessors are selected as per the "eligibility criteria" laid down by HSSC for assessing each job role. The assessors selected by Assessment Agencies are scrutinized and made to undergo training and

introduction to HSSC Assessment Framework, competency based assessments, assessors guide etc. HSSC conducts “Training of Assessors” program from time to time for each job role and sensitize assessors regarding assessment process and strategy which is outlined on following mandatory parameters:

- 1) Guidance regarding NSQF
- 2) Qualification Pack Structure
- 3) Guidance for the assessor to conduct theory, practical and viva assessments
- 4) Guidance for trainees to be given by assessor before the start of the assessments.
- 5) Guidance on assessments process, practical brief with steps of operations practical observation checklist and mark sheet
- 6) Viva guidance for uniformity and consistency across the batch.
- 7) Mock assessments
- 8) Sample question paper and practical demonstration

## References

## Glossary

<b>Sector</b>	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.

## Acronyms and Abbreviations

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
CPR	Cardio Pulmonary Resuscitation