KHYBER MEDICAL UNIVERSITY

EMERGENCY TECHNOLOGY CURRICULUM

STUDY GUIDE SEMESTER 5th

16 Weeks Activity Planner

2025

CENTRAL CURRICULUM & ASSESSMENT COMMITTE FOR NURSING,
REHABILITATION SCIENCES & ALLIED HEALTH SCIENCES

CONTENTS

TOS Development Team		
S. No	**Name**	**Designation**
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2.	**Mr. Shah Fahad**	Coordinator Respiratory therapy & intensive care technology KMU-IPMS, Peshawar **(Team Leader)**
3.	**Miss. Shaheen Fatima**	Coordinator Emergency Care technology KMU-IPMS, Peshawar
4.	**Mr. Mahmood Jan**	Demonstrator Respiratory therapy & intensive care technology KMU-IPMS, Peshawar
First Review		
5.	**Mr. Abdur Rehman**	Director IPMS- KMU, Peshawar
Final Review		
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7.	**Mr. Babar Ali**	Lecturer Cardiology Technology, KMU-IPMS, Peshawar

VISION AND MISSION

Khyber Medical University (KMU) Vision:

Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

Khyber Medical University (KMU) Mission:

Khyber Medical University aims to promote professional competence through learning and innovation for providing comprehensive quality health care to the nation.

Institute of Paramedical Sciences Peshawar (IPMS-PESH) Mission:

To produce allied health professionals who excel in their skills, research, compassionate care, and community involvement, thereby enhancing the healthcare system

PROGRAM INTRODUCTION

The BS Emergency Care Technology program at Khyber Medical University is a comprehensive four-year undergraduate degree designed to equip students with the knowledge, skills, and competencies required to become competent Emergency Care technologists. Emergency Care technology is a vital healthcare profession that focuses on the diagnosis, treatment, and management of acute traumatic and medical emergencies. Emergency Care technologists work closely with patients, healthcare providers, and other medical professionals to provide accurate diagnoses and improve patient outcomes.

This Program is structured to provide students with a strong foundation in the sciences and specialized training in Emergency care technology. Students will learn about the principles of acute emergencies, including the life- threatening acute cardiovascular emergencies, drugs used in the emergency department and latest techniques and technologies used in clinical emergency scenarios. Throughout the four-year program, students will participate in clinical rotations and internships at top-tier hospitals and healthcare facilities, where they will gain hands-on experience in patient care and develop the skills necessary to work effectively in a fast-paced healthcare environment. Upon completion of the program, graduates will be eligible to take the first aid and BLS certification from Rescue 1122 department, Pakistan, and will be consider eligible to work as an emergency technologist in various emergency departments.

By the end of the BS Emergency Care Technology Degree, the students will be able to: Cognitive Domain:

1.Explain the principles of acute traumatic & medical emergencies, pathophysiology, and related aspects.

2.Interpret pertinent clinical information to select appropriate diagnostic procedures for neonatal, pediatric, and adult patients with acute emergencies.

3.Identify potential expanded roles for clinical emergency care professionals by examining professional behavior and the history of the field.

4.Discuss the current professional and clinical roles in emergency care technology.

5.Apply knowledge of the field to address current or future needs related to clinical practice, administration, education, and/or research

Psychomotor Domain

1. Demonstrate proficiency in using the latest techniques and technologies in Emergency technology.
2. Perform patient assessments and deliver high-quality diagnoses in a clinical setting.
3. Effectively communicate with patients, healthcare providers, and other medical professionals using appropriate terminology.
4. Work collaboratively with inter-professional teams to deliver effective, patient-centered diagnosis & care.
5. Develop the skills necessary to work efficiently in a fast-paced healthcare environment.

Affective Domain

1. Exhibit professional behavior and adhere to ethical values in the delivery of emergency care.
2. Incorporate an evidence-based approach to patient care by identifying and accessing appropriate literature and assessing relevant medical research.
3. Demonstrate leadership skills in the emergency care profession, healthcare, and the community.
4. Engage in continuous learning and professional development to stay current with the latest advancements in the field of emergency technology.
5. Provide compassionate and patient-centered care that respects the dignity and autonomy of each individual

5th semester subjects for BS Emergency Care Technology		
S. No	**Subject**	**Duration**
1.	ECT-603 Trauma Emergency-I, 3(2+1)	16 Weeks
2.	ECT-604 Surgical Emergency-I, 3(2+1)	16 Weeks
3.	ICT-604 Clinical Laboratory Investigations Credit Hours 3(2+1)	16 Weeks
4.	ECT-606, Basic and Advance life support 3(2+1)	16 Weeks
5.	ECT-605 Burns & Toxicology Credit Hours3(2+1)	16 Weeks
6.	ANS-606 Anesthesia Equipment Credit Hours 3(2+1)	16 Weeks

ECT-603 TRAUMA EMERGENCY-I 3(2+1)

Course Description

This course will introduce students to the fundamental concepts of trauma emergencies, including the mechanisms of injury, clinical presentation, and management of acute traumatic conditions. Students will gain a comprehensive understanding of various types of trauma, such as blunt and penetrating injuries, traumatic brain injuries, spinal cord injuries, chest and abdominal trauma, trauma in pregnancy, and fractures. The course focuses on common clinical conditions encountered in trauma cases, such as shock, hemorrhage, and multi-system trauma. Additionally, students will learn to perform a thorough primary and secondary survey, interpret findings, and implement appropriate interventions in emergency settings. This course aims to develop students' practical skills, enabling them to provide timely and accurate emergency care, including airway management, fluid resuscitation, and stabilization in critical trauma situations.

Learning Objectives

Cognitive Domain

By the end of this course, students should be able to:

1. Describe the mechanisms, classifications, and types of trauma, including blunt and penetrating injuries.
2. Explain the clinical presentation and progression of conditions like hemorrhagic shock, pneumothorax, and fractures.
3. Describe the concepts of trauma-related complications, such as sepsis, compartment syndrome, etc.
4. Analyze the role of trauma protocols, including the ABCDE approach, in managing emergencies effectively.

Psychomotor Domain

By the end of this course, students should be able to:

1. Obtain a detailed clinical history relevant to trauma emergencies, focusing on the mechanism and timing of the injury.
2. Perform a systematic trauma assessment, including primary and secondary surveys, and identify critical findings.
3. Perform life-saving techniques, including airway management, bleeding control, and spinal stabilization.

4. Execute cardiopulmonary resuscitation (CPR) in trauma scenarios according to standard guidelines.
5. Work collaboratively as part of a trauma team to assess, diagnose, and prioritize emergency treatment plans.

Affective Domain

By the end of this course, students should be able to:

6. Demonstrate punctuality
7. Adhere to the established norms of interactive learning (IL) and (SGD)learning effectively
8. Make ethical, timely, and competent decisions when confronted with challenging situations in trauma care.
9. Follow standard operating procedures (SOPs) for trauma-related practical skills and procedures with precision and attention to safety.

TABLE OF SPECIFICATIONS
TRAUMA EMERGENCY-I 3(2+1)

S. No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assessment	No of items
				C	P	A				
TOPIC: INTRODUCTION TO TRAUMA AND TRAUMA TYPES										
1.	**Week-1**	Definition	Define trauma	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**02**
2.		Epidemiology	Discuss the epidemiology of trauma with reference to Pakistan	C2						
3.		Importance of time	Explain the importance of time in the context of trauma event	C2						
4.		Types of trauma	Describe the types of trauma	C2						
5.		Major causes	List the major causes of trauma	C2						
6.		Patient's response to injury	Explain the patient's response to an injury	C3						
7.		Post- traumatic stress disorder	Describe post- traumatic stress disorder	C3						
8.		Practical performance	Demonstrate various trauma types through charts independently		A4		**Video Demo**	**1**	**OSPE/ OSCE**	
9.		Comply to SOPs	Comply to SOPs for handling the charts effectively			P4				
TOPIC: TYPES OF WOUND										
10.		Introduction	Introduce wound	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**04**
11.		Normal wound healing	Explain the normal wound healing process	C2						
12.		Normal healing in specific tissues	Explain normal wound healing in Bone, nerve and tendon	C2						
13.		Wound closure	Explain the process of wound closure	C2						
14.		Types of wounds	List the major types of wound	C2						
15.		Managing acute wound	Describe the management of acute wound	C2						

16.	**Week-2**	Bites	Describe bite wound and its management in emergency department	C2						
17.		Puncture wound	Describe puncture wound and its management in emergency department	C2						
18.		Hematoma	Define hematoma and its management in emergency department	C2						
19.		Degloving wound	Describe Degloving injury and its management in emergency department	C2						
20.		Compartment syndrome	Define compartment syndrome and describe its management in emergency room	C3						
21.		Chronic wounds	Describe chronic wounds and their management protocols in emergency department	C3						
22.		Practical performance	Demonstrate suturing techniques independently		P4		**Practical Demo**	**1**	**OSPE/ OSCE**	
23.		Comply to SOPs	Comply to SOPs for suturing techniques effectively			A4				
TOPIC: BIOMECHANICS OF TRAUMA										
24.	**Week-3**	Introduction	Introduce biomechanics of trauma	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**04**
25.		Energy Laws	Explain energy laws governing the physical injuries	C2						
26.		Patterns of injury	Describe injury patterns and their impact on injury	C2						
27.		Vehicular impact	Explain vehicular impact, types and associated injuries	C2						
28.		Pedestrian injury	Explain the mechanism of pedestrian injury	C2						
29.		Injury to the cyclist	Explain cyclist injury and associated mechanisms	C2						
30.		Fall injury	Explain fall injuries and their associated mechanisms	C2						
31.		Blast injury	Explain blast injury, types and associated mechanisms	C2						
32.		Penetrating trauma	Describe penetrating trauma and its causes	C2						
33.		Velocity	Explain the role of velocity in determining the extent of tissue injury	C3						
34.		Bullets	Explain the role of bullet's size, bullet trajectory and impact on the tissue sustained.	C3						
35.		Shotgun wounds	Explain the mechanism of shotgun wound and related aspects	C3						
36.		Entrance and exit wounds	Describe entrance and exit wounds and their associated mechanisms	C3						
37.		Practical performance	Demonstrate the impaled bullet through x- rays independently		P4		**Practical Demo**	**1**	**OSPE/ OSCE**	
38.		Comply to SOPs	Comply to SOPs for the demonstration of impaled bullet effectively			A4				
TOPIC: PRE-HOSPITAL TRAUMA CARE										
39.	**Week-4**	Introduction	Introduce pre- hospital trauma care	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**04**
40.		Scene safety and assessment	Explain the significance of scene safety in provision of pre- hospital care	C2						
41.		The chain of rescue	Explain the chain of rescue in pre- hospital trauma care	C2						
42.		Goals	List the goals of pre- hospital trauma care	C2						
43.		Airway management	Explain airway management protocols in pre- hospital trauma care	C3						
44.		Breathing and ventilation	Explain rapid assessment and management of breathing and ventilation in pre- hospital trauma care	C3						
45.		Circulation and hemorrhage control	Explain the steps for hemorrhage control and maintenance of circulation in pre- hospital trauma care	C3						
46.		Disability and neurological status	Explain the significance of Glasgow coma scale assessment in prioritization of the injured patients in pre- hospital settings	C3						

47.		Exposure and environment	Explain the exposure of the patient for identification of obvious injuries while maintaining a safe environment	C3						
48.		Patient's extrication	Explain the patient's extrication in pre- hospital settings	C3						
49.		Spinal immobilization	Illustrate procedure of spinal immobilization to prevent catastrophic spinal injuries	C3						
50.		Fracture and musculoskeletal injuries	Explain management of fractures & musculoskeletal injuries in pre-hospital settings	C3						
51.		Communication and documentation	Explain the key components of pre- hospital communication and documentation of incidents for future uses	C3						
52.		Transport decision making	List the factors determining the need for transfer to the definitive care	C3						
53.		Practical performance	Demonstrate the technique for the application of back slab to the fractured bone independently		P4		**Practical Demo**	**1**	**OSPE/ OSCE**	
54.		Ethical norms	Maintain the ethical norms of the patient effectively			A4				
TOPIC: TRIAGE, MASS AND MULTIPLE CASUALTY										
55.	**Week-5**	Definition	Define triage, mass and multiple causality	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**03**
56.		Principles	Explain the principle of triage	C2						
57.		Types	Explain the types of triage	C2						
58.		purposes	List the purposes of triage	C2						
59.		triage Categories	Describe various categories of patients on the basis of triage	C2						
60.		Triage systems	Explain the triage systems	C3						
61.		Triage in various settings	Explain triage in various settings as an example	C3						
62.		Ethical considerations	Explain ethical considerations that must be applied during triage	C3						
63.		Tool & equipment used in triage	Describe various tools and equipment used during triage	C4						
64.		Practical performance	Demonstrate labeling the patients based on their priorities of need for immediate care independently		P4		**Video Demo**	**1**	**OSPE/ OSCE**	
65.		Ethical Norms	Maintain the ethical norms of the patients effectively			A4				
TOPIC: PRIMARY SURVEY & RESUSCITATION										
66.	**Week-6**	Definition	Define primary survey and resuscitation	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**06**
67.		Team approach	Explain the importance of teamwork in the initial assessment of a trauma patient	C2						
68.		Assessment	Describe the correct sequence of priorities for assessment of a severely injured	C2						
69.		Phases of trauma resuscitation	Describe guidelines and techniques to the initial resuscitative and definitive-care phases of the treatment of a multiply injured patient	C2						
70.		Mechanism of injury	Explain how a patient's medical history and the mechanism of injury contribute to the identification of injuries	C3						
71.		Airway maintenance with C-spine protection	Illustrate the techniques of maintaining a patent airway in patients with suspected or confirm cervical spine injury with reference to chin left- jaw thrust maneuvers	C3						
72.		Breathing and ventilation	Describe the ways for the assessment of breathing and maintaining an adequate ventilation	C3						
73.		Circulation & hemorrhage	Describe the steps for the effective hemorrhage control	C3						

		control								
74.		Disability and neurological evaluation	Describe the focused neurological examination and GCS assessment in categorization of the patients	C3						
75.		Exposure & environmental control	Explain exposure of the patient and maintenance of the safe environment while performing primary survey	C3						
76.		Patient transfer	Recognize patients who will require transfer for definitive management	C4						
77.		Practical performance	Demonstrate the steps of hemorrhage control independently		P4		**Practical Demo**	**1**	**OSPE/ OSCE**	
78.		Comply to SOPs	Comply to SOPs for the hemorrhage control independently			A4				
TOPIC: ADJUNCTS TO PRIMARY SURVEY										
79.	**Week-7**	Definition	Define adjuncts to primary survey	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**04**
80.		Electrocardiographic monitoring	Explain the significance of ECG monitoring in evaluation of trauma patients	C2						
81.		Urinary catheterization	Explain the significance of urinary catheterization in evaluation and management of trauma patient	C2						
82.		Physiological monitoring	Describe physiological parameters for the evaluation of an injured patient	C2						
83.		X- rays and other diagnostic studies	Explain the role of radiologic and laboratory studies in the evaluation and management of an injured patient	C3						
84.		Practical performance	Demonstrate the insertion of urinary and gastric catheter independently		P4		**Video Demo**	**1**	**OSPE/ OSCE**	
85.		Comply to SOPs	Comply to SOPs for urinary and gastric catheterization effectively			A4				
TOPIC: SECONDARY SURVEY, ADJUNCTS & PHYSICAL EXAMINATION										
86.	**Week-8**	Definition	Define secondary survey and its adjuncts	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**06**
87.		AMPLE history	Explain AMPLE history pertaining to secondary survey	C2						
88.		Head to Toe examination	Explain the importance of head to toe examination in identification of missed or occult injuries	C2						
89.		Vital signs	Explain vital signs and their contribution to patient's management	C2						
90.		Mechanism of injury	Explain the role of probing the mechanism of injury and various injury patterns	C3						
91.		Adjuncts to secondary survey	Explain adjuncts to secondary survey	C3						
92.		Practical performance	Demonstrate assessment of vital signs independently		P4		**Practical Demo**	**1**	**OSPE/ OSCE**	
93.		Comply to SOPs	Comply to SOPs for the assessment of vital signs effectively			P4				
TOPIC: AIRWAY & VENTILATORY MANAGEMENT										
94.	**Week-9**	O2 therapy in trauma patients	List the indications of supplemental oxygen administration in injured patients	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**05**
95.		Airway compromising factors	list the clinical situations in which airway compromise is likely to occur.	C2						
96.		Airway obstruction	Recognize the signs and symptoms of acute airway obstruction	C2						
97.		Inadequate ventilation	Recognize ventilatory compromise and signs of inadequate ventilation	C2						
98.		Establishing patent airway	Describe the techniques for establishing and maintaining a patent	C2						

			airway.							
99.		Adequate oxygenation and ventilation	Describe the techniques for confirming the adequacy of ventilation and oxygenation, including pulse oximetry and end-tidal CO2 monitoring.	C3						
100.		Definitive airway	Describe definitive airway and its significance	C3						
101.		Rapid Sequence intubation	List the indications for rapid sequence intubation.	C4						
102.		Post care	Outline the steps necessary for maintaining oxygenation before, during, and after establishing a definitive airway	C5						
103.		Practical performance	Demonstrate Orotracheal intubation independently		P4		**Video Demo**	**1**	**OSPE/ OSCE**	
104.		Comply to SOPs	Comply to SOPs for handling laryngoscope effectively			A4				
TOPIC: DIFFICULT AIRWAY MANAGEMENT										
105.	**Week-10**	Definition	Define difficult airway management	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**05**
106.		Difficult airway	List factors predicting difficult airway	C2						
107.		Difficult intubation	Explain LEMON assessment for difficult intubation	C2						
108.		Airway decision scheme	Provide algorithm for deciding the appropriate route of airway management	C2						
109.		Airway maintenance techniques	Describe airway maintenance techniques to ensure a patent airway	C2						
110.		Definitive airway	List indications for the placement of a definitive airway	C2						
111.		ETT placement	Describe techniques for the confirmation of the proper placement of an ETT	C3						
112.		Needle and surgical Cricothyroidotomy	Illustrate the surface markings and structures relevant to performing needle and surgical cricothyroidotomies	C3						
113.		Indications and Complications	List the indications and complications of needle and surgical Cricothyroidotomies.	C3						
114.		Practical performance	Demonstrate LEMON formula for the assessment of difficult airway independently		P4		**Practical Demo**	**1**	**OSPE/ OSCE**	
115.		Ethical norms	Maintain ethical norms for the assessment of difficult airway effectively			A4				
TOPIC: TRAUMA FLOW SHEET										
116.	**Week-11**	Introduction	Introduce trauma flow sheet	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**03**
117.		Purposes	List the purposes of trauma flow sheet	C2						
118.		Contents	Describe the contents of the trauma flow sheet	C2						
119.		Importance	Explain the importance of the trauma flow sheet	C2						
120.		Structure	Describe the structure of the trauma flow sheet	C3						
121.		Clinical applications	Explain the practical applications of the trauma flow sheet	C3						
122.		Limitations	List the limitations of the trauma flow sheet	C4						
123.		Practical performance	Demonstrate documentation in the trauma flow sheet independently		P4		**Practical Demo**	**1**	**OSPE/ OSCE**	
124.		Comply to SOPS	Comply how to take care of the trauma flow sheet effectively			A4				
TOPIC: TRAUMA SCORES										
125.		Introduction	Introduce trauma score	C1			**Interactive lecture /**	**2**	**MCQ's**	
126.		Types	List the types of trauma scores	C2						

127.	**Week-12**	Revised trauma score	Describe Revised trauma score	C2			**SGDs**			**04**
128.		Pediatric trauma score	Describe pediatric trauma score	C2						
129.		Injury severity score	Describe injury severity score	C2						
130.		Components	Describe the components of each type of trauma score	C3						
131.		Patients classification	Explain the significance of trauma scores in the evaluation and prioritization of the critically ill patients	C4						
132.		Applications	Explain the practical applications of each type of trauma score	C5						
133.		Limitations	List the limitations of trauma scores	C5						
134.		Practical performance	Demonstrate application of the trauma scores on the patients independently		P4		**Role play**	**1**	**OSPE/ OSCE**	
135.		Consent	Obtain consent from the patient while applying trauma scores effectively			A4				
TOPIC: INJURY PREVENTION										
136.	**Week-13**	Introduction	Introduce injury prevention	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**03**
137.		Classification	Classify injury prevention	C2						
138.		Haddon Matrix	Explain Haddon Matrix approach for understanding injury prevention	C2						
139.		Components	Describe the components of injury prevention	C3						
140.		Developing an injury prevention program	Explain the importance of developing an injury prevention program- a public health approach	C4						
141.		Practical performance	Demonstrate the practical uses of PPE independently		P4		**Video Demo**	**1**	**OSPE/ OSCE**	
142.		Comply to SOPs	Comply to SOPs for the applications of PPE effectively			A4				
TOPIC: THORACIC TRAUMA										
143.	**Week-14**	introduction	Introduce thoracic trauma	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**06**
144.		Primary survey	Explain life threatening injuries that compromise airway, breathing and circulation of the patient following a chest trauma (Airway obstruction, Tension pneumothorax, Open pneumothorax, Flail chest and pulmonary contusion , Massive hemothorax, Cardiac tamponade)	C2						
145.		Resuscitative thoracotomy	List the indications for resuscitative thoracotomy for management of life threatening chest injuries	C3						
146.		Secondary survey	Explain potentially life threatening injuries following a chest trauma (Simple pneumothorax, Hemothorax, Pulmonary contusion, Tracheobronchial tree injury , Blunt cardiac injury, Traumatic aortic disruption, Traumatic diaphragmatic injury, Blunt esophageal rupture)	C3						
147.		Management	Explain the emergency room management of the life threatening and potentially life threating chest injuries	C4						
148.		Other chest injuries	Explain the management of subcutaneous emphysema, Thoracic crush injuries, Sternal, rib, and clavicular fractures	C4						
149.		Practical performance	Demonstrate chest tube placement in patients with chest trauma independently		P4		**Video Demo**	**1**	**OSPE/ OSCE**	
150.		Comply to SOPs	Comply to SOPs for the chest tube placement effectively			A4				
TOPIC: HEAD TRAUMA & TRAUMATIC BRAIN INJURY										
151.		Definition	Define head trauma and traumatic brain injury	C1			**Interactive lecture /**	**2**	**MCQ's**	
152.		Basic intracranial physiology	Explain the basic intracranial physiology	C2						

153.	**Week-15**	Patient's evaluation	Explain the initial evaluation of the head and traumatic brain injury according to the protocols of the primary survey	C3			**SGDs**			**06**
154.		Classification of brain injury	Classify brain injuries	C3						
155.		Neurological examination	Explain the role of neurological examination in predicting the severity of brain injury	C4						
156.		Diagnostic studies	Explain the role of radiologic studies in the diagnosis and evaluation of various head trauma and traumatic brain injuries	C4						
157.		Adequate resuscitation	Explain the steps for adequate resuscitation in patients in traumatic brain injury	C5						
158.		Algorithms	Illustrate algorithm for management of mild, moderate and severe brain injury	C5						
159.		Medical therapy	Explain the medical management of traumatic brain injury	C5						
160.		Surgical management	Explain the surgical management of head and traumatic brain injury	C5						
161.		Practical performance	Demonstrate CT of the brain for the evaluation of the brain injuries		P4		**Video Demo**	**1**	**OSPE/ OSCE**	
162.		Ethical norms	Maintain ethical norms of the patient effectively			A4				
TOPIC: FACIAL AND OCULAR TRAUMA										
163.	**Week-16**	Introduction	Introduce facial and ocular trauma	C1			**Interactive lecture / SGDs**	**2**	**MCQ's**	**05**
164.		Causes	List the causes of facial and ocular injuries	C2						
165.		Primary survey	Explain the primary survey for the evaluation of the ocular and facial injuries	C2						
166.		Secondary survey	Explain secondary survey for the detail evaluation of the facial and ocular injuries	C2						
167.		Facial injuries	Explain the assessment and management of the bony and soft tissue injuries of the face according to the ATLS protocols with reference to airway management	C3						
168.		Eye injuries classification	Identify eyelid injuries that can be treated by the primary care and those that require referral to an Ophthalmologist	C3						
169.		Foreign body in eye	Explain how to examine the eye for a foreign body and how to remove superficial foreign bodies to prevent further injury	C3						
170.		Corneal abrasion	Identify corneal abrasion and describe its proper Management	C3						
171.		Hyphema	Identify hyphema and describe its initial management and the necessity for referral to an Ophthalmologist.	C3						
172.		Rupture globe	Identify ruptured-globe injury and describe its initial management prior to referral to an ophthalmologist	C3						
173.		Eye injury due to chemicals	Evaluate and treat eye injuries that result from Chemicals	C4						
174.		Orbital fracture	Evaluate a patient with an orbital fracture and describe its initial management and the necessity for referral	C5						
175.		Retro bulbar hematoma	Identify retro bulbar hematoma and explain the necessity for immediate referral	C5						
176.		Practical performance	Demonstrate irrigation of eye in patients with chemical injuries to the eye independently		P4		**Video Demo**	**1**	**OSPE/ OSCE**	
177.		Comply to SOPs	Comply to SOPs for irrigation of the eye effectively			A5				

Recommended Books:

1. Advance life support by American College of surgeons- 9th edition
2. ABC of major trauma- 5th edition
3. Trauma Management guidelines by WHO
4. Baily and love short practice of surgery- 26th edition
5. General trauma care and related aspects
6. Emergencies in trauma – Oxford medical publications
7. Emergency department resuscitation of the critically ill by Michael E. Winters, 2nd edition
8. Oxford Handbook of accident and emergency- 2nd edition

ASSESSMENT BREAK DOWN

S. No	Topic	No of MCQ's	No of OSPE/OSCE stations	Static / interactive
1.	Introduction to trauma and trauma types	02	00	----------
2.	Types of wound	04	01	interactive
3.	Biomechanics of trauma	04	01	Static
4.	Pre-hospital trauma care	04	01	Static
5.	Triage, mass and multiple casualty	03	01	Static
6.	Primary survey & resuscitation	06	01	Static
7.	Adjuncts to primary survey	04	01	Static
8.	Secondary survey, adjuncts & physical examination	06	01	Interactive
9.	Airway & ventilatory management	05	01	Static
10.	Difficult airway management	05	01	Static
11.	Trauma flow sheet	03	00	Static
12.	Trauma scores	04	00	Static
13.	Injury prevention	03	01	Static
14.	Thoracic trauma	06	02	Static
15.	Head trauma & traumatic brain injury	06	01	Static

16.	Facial and ocular trauma	05	01	Static
17.	**Total**	**70**	**14**	**14**

ECT-608 SURGICAL EMERGENCY I 3(2+1)

COURSE DESCRIPTION

This course will introduce students to the fundamental concepts of surgical emergencies, including their pathophysiology, clinical presentation, and urgent management. Students will gain a comprehensive understanding of various acute surgical Techniques, such as arterial line placement, peripheral venous access, Tracheostomy tube placement, venous cut down, and hemorrhage control. The course emphasizes the recognition and management of life-threatening conditions, including sepsis, hemorrhage, and organ dysfunction. Additionally, students will learn to conduct a systematic assessment, interpret diagnostic findings, and implement timely surgical and non-surgical interventions in emergency settings. This course aims to develop students' practical skills, enabling them to provide prompt and effective emergency care, including resuscitation, infection control, pain management, and surgical stabilization in critical scenarios.

LEARNING OBJECTIVES

Cognitive Domain

By the end of this course, students should be able to:

1. Explain the management of life-threatening hemorrhage, including damage control resuscitation and transfusion protocols.
2. Describe the principles of wound management, including wound closure techniques, infection control, and post-operative care.

Psychomotor Domain

By the end of this course, students should be able to:

1. Demonstrate proper techniques for establishing vascular access, including peripheral IV Cannulation and central venous catheter insertion in emergency settings.
2. Perform basic and advanced airway management, including endotracheal intubation and Cricothyroidotomy in airway compromise situations.

3. Demonstrate appropriate surgical skills such as Abscess drainage, wound debridement, and application of sutures.

Affective Domain

By the end of this course, students should be able to:

1. Demonstrate punctuality and professional responsibility in emergency surgical settings.
2. Follow the structured learning norms of interactive lectures (IL) and small group discussions (SGD) effectively.
3. Exhibit empathy, teamwork, and effective communication with patients, families, and healthcare teams in high-stress emergencies.
4. Uphold ethical principles in decision-making, including patient confidentiality, informed consent, and end-of-life care discussions.
5. Adhere to standard operating procedures (SOPs) for infection control, surgical safety, and patient management in emergency settings.

TABLE OF SPECIFICATIONS SURGICAL EMERGENCY- I 3(2+1)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assessment	No of Items
				C	P	A				
TOPIC: PERIPHERAL VENOUS ACCESS										
1	Week-1	Definition	Define peripheral venous access	C1			Interactive Lecture/SGD	2	MCQs	5
2		indications	Enlist the indications of peripheral venous access	C1						
3		equipment	Enlist the equipment required for peripheral venous access	C1						
4		advantages	Discuss the advantages of peripheral venous access	C2						
5		procedure	Explain the procedure of IV cannulation	C3						
		complications	Discuss the early & late complications associated with peripheral venous access	C4						
6		Video demonstration	Demonstrate the procedure of peripheral venous access effectively		P4		Demo	1	OSCE	
7		Informed consent	Communicate the procedure of IV cannulation to the patient effectively			A4	Video Demonstration			1
TOPIC: VENOUS CUT-DOWN										
8	Week-2	Definition	Define venous cut-down	C1			Interactive Lecture/SGD	2	MCQs	3
9		indications	Enlist the indications of venous cut-down	C1						
10		equipment	Enlist the equipment required for venous cut-down	C1						
11		procedure of venesection	Explain the procedure of venesection	C3						
12		complications	Discuss the complications of venous cut-down	C4						1
13		Video demonstration	Demonstrate the procedure of venous cutdown effectively		P4		Demo	1	OSCE	
14		Informed consent	Communicate the procedure of venous cut down to the patient effectively			A4	Video Demonstration			

TOPIC: CENTRAL VENOUS CATHETERIZATION										
15	Week-3	Definition	Define Central venous catheterization	C1			Interactive Lecture/SGD	2	MCQs	3
16		indications	Enlist the indications of Central venous catheterization	C1						
17		Contraindications	Enlist the contraindications of Central venous catheterization	C1						
18		types	Discuss the different types of central venous catheters	C2						
19		procedure of Central venous catheterization	Explain the procedure of central venous catheterization (subclavian, internal jugular &femoral approach)	C3						
20		complications	Explain the complications of central venous catheterization	C4						
21		video demonstration	Demonstrate the procedure of central venous catheterization effectively		P4		Demo	1	OSCE	1
22		Informed consent	Communicate the procedure of Central venous catheterization to the patient effectively			A4	Video Demonstration			
TOPIC: ARTERIAL LINE										
27	Week-4	Indications	Enlist the indications of the Arterial line	C1			Interactive Lecture/SGD	2	MCQs	5
28		equipment	Enlist the equipment required for arterial line placement	C2						
29		Invasive BP monitoring	Discuss the advantages and disadvantages of invasive Blood pressure monitoring	C2						
30		procedure	Explain the procedure of arterial line placement	C3						
31		Complications	Discuss the Complications of arterial line placement	C3						
32		Mechanism of action	Discuss the mechanism of Action of a Transducer	C4						
33		video demonstration	Demonstrate the procedure of arterial line placement effectively		P4		Demo	1	OSCE	1
34		Informed consent	Communicate the procedure of arterial line placement to the patient effectively			A4	Video Demonstration			
TOPIC: TRACHEOSTOMY										
35	Week-5	Definition	Define tracheostomy	C1			Interactive Lecture/SGD	2	MCQs	3
36		indications	Enlist the indications of tracheostomy	C1						
37		equipment	Enlist the equipment required for tracheostomy	C1						
		Types	Discuss the different types of tracheostomy	C2						
38		procedure of tracheostomy	Explain the procedure of tracheostomy	C3						
39		complications	Discuss the complications of tracheostomy	C4						
40		Care of Tracheostomy tube	Discuss the care of the tracheostomy tube	C3						
41		Video demonstration	Demonstrate the procedure of tracheostomy tube placement		P4		Demo	1	OSCE	

			Effectively							
42		Informed consent	Communicate the procedure of tracheostomy to the patient effectively			A4	Video Demonstration			1
TOPIC: INGROWN TOE NAIL (IGTN)										
43	Week-6	Definition	Define Ingrown Toe Nail (IGTN)	C1			Interactive Lecture/SGD	2	MCQs	7
44		Causes	Discuss the causes of Ingrown Toe Nail	C2						
45		stages of Ingrown Toe Nail	Explain the stages of Ingrown Toe Nail	C3						
46		Management	Explain the general measures, Non-surgical and surgical methods for the management of Ingrown Toe Nail	C4						
47		Post-operative care	Explain the Post-operative care required for Ingrown Toe Nail	C3						
48		Practical performance	Video demonstration on Non-surgical management of Ingrown toe nails effectively		P4		Demo	1	OSCE	1
49		Comply to SOP	Comply with SOPs for the Non-surgical management of Ingrown toenails effectively			A4	Video Demonstration			
TOPIC: CHEST TUBE										
50	Week-7	Definition	Define chest tube	C1			Interactive Lecture/SGD	2	MCQs	4
51		indications	Enlist the indications of chest tube insertion	C1						
52		Equipment	Enlist the equipment required for chest tube insertion	C1						
54		procedure	Explain the procedure of chest tube insertion	C3						
55		complications	Discuss the complications associated with chest tube insertion	C4						
58		Video demonstration	Demonstrate the procedure of chest tube insertion effectively		P4		Demo	1	OSCE	1
59		Informed consent	Communicate the procedure of chest tube insertion effectively			A4	Video Demonstration			
TOPIC: NG TUBE										

Recommended Books:

1. Baily & love short practice of surgery 28th edition
2. Rosen's emergency medicine; concepts & clinical practice John. A Marx.2005.
3. Critical care medicine At a Glance. Richard Leasch.
4. Oh; s Manual of Intensive Care by Andrew Berstin.
5. Churchill's pocketbook of intensive care by Simon M. Whitely.
6. Quick critical care reference by Susan B Stillwell.

ASSESSMENT BREAKDOWN				
S.No	**Topics**	**No of MCQ**	**No of OSPE / OSCE Stations**	**Static / Interactive**
1	PERIPHERAL VENOUS ACCESS	5	1	Interactive
2	CENTRAL VENOUS CATHETERIZATION	3	1	Static
3	ARTERIAL LINE	5	1	Static
4	TRACHEOSTOMY	3	1	Static
5	VENOUS CUT-DOWN	3	1	Static
6	INGROWN TOE NAIL (IGTN)	7	1	interactive
7	CHEST TUBE	4	1	Static
8	NG TUBE	5	1	Static
9	MANAGEMENT OF BRUISES, LACERATION AND ABRASIONS	4	1	interactive
10	HAEMORRHAGIC SHOCK	6	1	interactive
11	WOUND DEHISCENCE	2	1	Static
12	MANAGEMENT OF SOFT TISSUE INFECTION AND ABSCESS DRAINAGE	4	1	Static
13	SUTURE MATERIAL AND TECHNIQUES	5	1	Static

14	INTRAOSSEOUS ACCESS IN DEHYDRATED PATIENTS	4	1	Static
15	APPLICATION OF SPLINTING AND BACK SLABS	5	1	Static
16	ADVANCE AIRWAY MANAGEMENT	5	1	Static
Total	**16**	**70**	**16**	**16**

ECT-605 BASIC AND ADVANCE LIFE SUPPORT 3(2+1)

COURSE DESCRIPTION

This course provides an in-depth understanding of the all type of emergencies, assessment, and management of all emergencies. It covers the components of basic life support, fluid resuscitation, wound care, and complications

associated with cardiac arrest. Additionally, the course explores various toxicological emergencies, including poisoning, overdose, and hazardous material exposure. Emphasis is placed on prehospital and in hospital interventions, critical decision-making, and patient safety in cardiac arrest and toxicology management.

LEARNING OBJECTIVES

Cognitive Domain

By the end of this course, students should be able to:

1. Explain the basic and advanced life support.
2. Identify the principles of managing cardiac arrest including fluid resuscitation, high quality CPR, all emergency medication used in advanced life support.
3. Describe common toxicological emergencies, and clinical manifestations.
4. Discuss the, antidote administration, and supportive care in toxicology cases.

Psychomotor Domain

By the end of this course, students should be able to:

1. Demonstrate empathy and compassion when managing cardiac arrest patients and providing basic and advanced life support
2. Exhibit professionalism and ethical decision-making in prehospital and in hospital cardiac arrest cases.
3. Develop effective communication skills when educating patients and families on cardiac arrest prevention and poison control.

Affective Domain

By the end of this course, students should be able to:

1. Perform accurate assessment and triage of burn injuries based on severity and extent.
2. Demonstrate proper techniques for burn wound care, dressing application, and pain management.
3. Execute airway management and fluid resuscitation in critically burned patients.
4. Apply appropriate decontamination procedures for toxic exposures, including chemical and biological agents.
5. Administer antidotes and supportive treatments for specific poisoning cases, following established protocols.

TABLE OF SPECIFICATIONS

BASIC AND ADVANCE LIFE SUPPORT 3(2+1)

S.No	Weeks	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assessment	No of Items
				C	P	A				
TOPIC: GENERAL CONCEPT OF BASIC LIFE SUPPORT										
1	Week-1	Adult Chain of Survival	Explain Adult Chain of Survival	C2			Interactive Lecture/SGD	2	MCQs	5
2		Chain of Survival for an In-Hospital Cardiac Arrest	Discuss Chain of Survival for an In-Hospital Cardiac Arrest	C3						
3		Chain of Survival for an Out-of-Hospital Cardiac Arrest	Discuss Chain of Survival for an Out-of-Hospital Cardiac Arrest	C3						
4		Key Differences Between IHCA and OHCA Chains of Survival	explain Key Differences Between IHCA and OHCA Chains of Survival	C4						
5		Importance of 7 Each Link in the Chain of Survival	Discuss Importance of Each Link in the Chain of Survival	C3						
		Pediatric Chain of Survival	Explain Pediatric Chain of Survival	C3						
		High quality CPR	Discuss main components of high quality CPR	C3						
6		Practical performance 7	Perform high quality CPR on dummy		P4		Demo	1	OSCE	1
7		Ethical considerations	Maintain ethical considerations while performing CPR on patients			A4	Practical Demonstration			
TOPIC: Adult 1-Rescuer BLS Sequence										
8	Week-2	Introduction	Introduce 1-Rescuer BLS Sequence	C1			Interactive Lecture/SGD	2	MCQs	2
9		Verify Scene Safety, Check for Responsiveness, and Get Help	Discuss the detail procedure of Verifying Scene Safety, Checking for Responsiveness, and Getting Help	C3						
10		Assess for Breathing and Pulse	Discuss the Assessment steps for checking Breathing and Pulse	C3						
		Locating the Carotid Pulse	Locating the Carotid Pulse							
11		Next Actions	Determine Next Actions	C3						

		High-Quality CPR, Starting With Chest Compressions	Discuss the criteria for Beginning High-Quality CPR, Starting With Chest Compressions	C4						
		Attempt Defibrillation With the AED	Discuss the criteria for Attempting Defibrillation With the AED							
12		Resume High-Quality CPR	Resume High-Quality CPR	C4						
13		Video demonstration	Video demonstration on Adult 1-Rescuer BLS Sequence		P4		Demo	1	OSCE	1
14		Ethical considerations	Maintain ethical considerations while performing Adult 1-Rescuer BLS Sequence on patients			A4	Video Demonstration			
TTOPIC: Adult 2-Rescuer BLS Sequence										
15	Week-3	Introduction	Introduce 2-Rescuer BLS Sequence	C1			Interactive Lecture/SGD	2	MCQs	7
16		Verify Scene Safety, Check for Responsiveness, and Get Help	Discuss the detail procedure of Verifying Scene Safety, Checking for Responsiveness, and Getting Help	C3						
17		Assess for Breathing and Pulse	Discuss the Assessment steps for checking Breathing and Pulse	C3						
18		Locating the Carotid Pulse	Locating the Carotid Pulse	C3						
19		Next Actions	Determine Next Actions	C3						
20		High-Quality CPR, Starting With Chest Compressions	Discuss the criteria for Beginning High-Quality CPR, Starting With Chest Compressions	C3						
21		Video demonstration	Video demonstration on Adult 2-Rescuer BLS Sequence		P4		Demo	1	OSCE	1
22		Ethical considerations	Maintain ethical considerations while performing Adult 1-Rescuer BLS Sequence on patients			A4	Practical Demonstration			
TOPIC: AUTOMATED EXTERNAL DEFIBRELATOR FOR ADULT AND CHILDREN 8 YEARS OF AGE AND OLDER										
21	Week-4	General Concepts	Explain the General Concepts of AED	C1			Interactive Lecture/SGD	1	MCQs	4
22		Using the AED	Explain Universal Steps for Operating an AED	C3						
23		Special Circumstances	Discuss the Special Circumstances for using AED	C2						
24		High-Quality CPR After AED Use	Discuss the importance of high quality CPR after usin AED	C3						
TOPIC: TEAM DYNAMICS										

27	Week-4	importance of teams in multirescuer resuscitation	Describe the importance of teams in multirescuer resuscitation	C2			Interactive Lecture/SGD	1	MCQs	3
28		Effective team member during multirescuer CPR	Explain the effective Performance of a team member during multirescuer CPR	C2						
29		Elements of Effective Team Dynamics	Describe the Elements of Effective Team Dynamics	C5						
30		Constructive Intervention	Discuss Constructive Interventions	C3						
31		Debriefing	Explain Debriefing in team dynamics	C3						
33		Practical performance	To perform a Successful team dynamics during a multirescuer resuscitation attempt,		P4		Demo	1	OSCE	1
34		Ethical considerations	Maintain ethical considerations while performing team dynamics during a multirescuer resuscitation attempt on patients			A4	Practical Demonstration			
TOPIC: BLS FOR INFANTS AND CHILDREN										
35	Week-5	Age definitions	Define age criteria used in BLS	C1			Interactive Lecture/SGD	2	MCQs	3
36		Perform high-quality CPR for an infant	Discuss the important criteria to Perform high-quality CPR for an infant	C4						
37		Perform high-quality CPR for a child	Discuss the important criteria to Perform high-quality CPR for a child	C3						
38		Pediatric Cardiac Arrest Algorithm for the Single Rescuer	Discuss Pediatric Cardiac Arrest Algorithm for the Single Rescuer	C3						
39		Pediatric Cardiac Arrest Algorithm for 2 or More Rescuers	Discuss Pediatric Cardiac Arrest Algorithm for 2 or More Rescuers	C4						
40		Automated External Defibrillator for Infants and Children Less Than 8 Years of Age	Discuss the Automated External Defibrillator for Infants and Children Less Than 8 Years of Age	C4						
41		Practical performance	To perform Pediatric Cardiac arrest Algorithm for the Single Rescuer		P4		Demo	1	OSCE	

42		Ethical considerations	Maintain ethical consideration while performing Pediatric Cardiac Arrest Algorithm for the Single Rescuer on patients			A4	Practical Demonstration			
TOPIC: VENTILATION TECHNIQUES										
43	Week-6	modifications to compressions and breaths with an advanced airway in place	Describe modifications to compressions and breaths with an advanced airway in place	C1			Interactive Lecture/SGD	2	MCQs	4 1
44		rescue breathing for respiratory arrest victims	Provide rescue breathing for respiratory arrest victims	C3						
45		techniques for giving breaths without a barrier device for adults, children, and infants	Describe techniques for giving breaths without a barrier device for adults, children, and infants	C4						
46		Mouth-to-Mouth Breathing for Adults and Children	Describe Mouth-to-Mouth Breathing for Adults and Children	C3						
47		Breathing Techniques for Infants	Discuss Breathing Techniques for Infants	C3						
48		Practical performance	To Perform ventilation techniques for adult and children on dummy		P4		Demo	1	OSCE	
49		Ethical considerations	Maintain ethical consideration while performing ventilation techniques on patients			A4	Practical Demonstration			
TOPIC: Opioid-Associated Life-Threatening Emergencies										
		Opioids	Define Opioids	C1						
50	Week-7	opioid-associated life-threatening emergency	Recognize an opioid-associated life-threatening emergency	C2			Interactive Lecture/SGD	2	MCQs	6
51		administering naloxone in opioid-associated life-threatening emergencies	Describe the importance of administering naloxone in opioid-associated life- threatening emergencies	C4						
52		opioid-associated life-threatening emergency response sequence	Describe the steps in the opioid-associated life-threatening emergency response sequence.	C4						
53		Antidote to Opioid and Overdose Adverse Effects	Describe Antidote to Opioid and Overdose Adverse Effects	C3						

58		Practical performance	Perform steps in the opioid-associated life-threatening emergency response sequence		P4		Demo	1	OSCE	1
59		Ethical considerations	Maintain ethical consideration while performing steps in the opioid-associated life-threatening emergency response sequence			A4	Practical Demonstration			
TOPIC: Choking Relief for Adults, Children, and Infants										
60	Week-8	Definition	Define chocking	C1			Interactive Lecture/SGD	2	MCQs	9
61		Sign and symptoms	Describe Sign and symptoms of chocking	C3						
62		Types	Describe types of chocking	C3						
63		Chocking relieve in adults	Describe Chocking relieve in adults according to AHA guidelines	C4						
64		Chocking relieve in children	Describe Chocking relieve in children according to AHA guidelines	C4						
65		Chocking relieve in infants	Describe Chocking relieve in infants according to AHA guidelines	C4						
66		Practical performance	Perform Chocking relieve in adults, children and infants according to AHA guidelines on dummy		P4		Demo	1	OSCE	1
67		Ethical considerations	Maintain ethical consideration while performing Chocking relieve in adults, children and infants according to AHA guidelines on patient			A4	Practical Demonstration			
TOPIC: ADVANCE CARDIAC LIFE SUPPORT										
68	Week-9	Definition	Define advance cardiac life support	C4			Interactive Lecture/SGD	2	MCQs	5
69		Synchronized and unsynchronized cardio version	Describe Synchronized and unsynchronized cardio version	C3						
70		Adult Cardiac Arrest Algorithm for PEA and asystole	Explain Adult Cardiac Arrest Algorithm for PEA and asystole	C5						
71		Adult Cardiac Arrest Algorithm for VF and Pvt	Explain Adult Cardiac Arrest Algorithm for VF and Pvt	C5						
		Adult Post–Cardiac Arrest Care Algorithm.	Describe Adult Post–Cardiac Arrest Care Algorithm.	C5						
76		Practical performance	Video demonstration on operating Defibrillator		P4		Demo	1	OSCE	1
77		Comply to SOP	Comply to SOPs while operating defibrillator			A4	Practical Demonstration			

TOPIC: Cardiac Arrest in Pregnancy										
78	Week-10	Maternal cardiac arrest	Describe basic key points for maternal cardiac arrest	C1			Interactive Lecture/SGD	2	MCQs	4
81		Cardiac Arrest in Pregnancy In-Hospital ACLS Algorithm	Describe Cardiac Arrest in Pregnancy In-Hospital ACLS Algorithm according to AHA.	C5						
		Post care	Describe post Cardiac Arrest care in Pregnancy In-Hospital ACLS Algorithm according to AHA.	C4						
86		Practical performance	Video demonstration on Cardiac Arrest in Pregnancy In-Hospital ACLS Algorithm according to AHA.		P4		Demo	1	OSCE	1
87		Ethical considerations	Maintain ethical consideration while performing Cardiac Arrest in Pregnancy In-Hospital ACLS Algorithm according to AHA.			A4	Practical Demonstration			
TOPIC: PRIMARY SURVEY & RESUSCITATION										
88	Week-11	Definition	Define primary survey and resuscitation	C1			Interactive Lecture/SGD	2	MCQs	5
		Team approach	Explain the importance of teamwork in the initial assessment of a trauma patient	C3						
89		Assessment	Describe the correct sequence of priorities for assessment of a severely injured	C3						
		Phases of trauma resuscitation	Describe guidelines and techniques to the initial resuscitative and definitive-care phases of the treatment of a multiply injured patient	C3						
		Mechanism of injury	Explain how a patient's medical history and the mechanism of injury contribute to the identification of injuries	C3						
		Airway maintenance with C- spine protection	Illustrate the techniques of maintaining a patent airway in patients with suspected or confirm cervical spine injury with reference to chin left-jaw thrust maneuvers	C3						
90		Breathing and ventilation	Describe the ways for the assessment of breathing and maintaining an adequate ventilation	C3						
91		Circulation & hemorrhage control	Describe the steps for the effective hemorrhage control	C3						
92		Disability and neurological evaluation	Describe the focused neurological examination and GCS assessment in categorization of the patients	C4						
93		Exposure &	Explain exposure of the patient and maintenance of the safe environment while	C3						

		environmental control	performing primary survey							
		Patient transfer	Recognize patients who will require transfer for definitive management	C3						
94		Practical performance	Demonstrate the steps of hemorrhage control independently		P4		Demo	1	OSCE	1
95		Comply to SOPs	Comply to SOPs for the hemorrhage control independently			A4	Practical Demonstration			
TOPIC: SECONDARY SURVEY, ADJUNCTS & PHYSICAL EXAMINATION										
96	Week-12	Definition	Define secondary survey and its adjuncts	C1			Interactive Lecture/SGD	2	MCQs	3
97		AMPLE history	Explain AMPLE history pertaining to secondary survey	C3						
98		Head to Toe examination	Explain the importance of head to toe examination in identification of missed or occult injuries	C2						
99		Vital signs	Explain vital signs and their contribution to patient's management	C3						
100		Mechanism of injury	Explain the role of probing the mechanism of injury and various injury patterns	C3						
101		Adjuncts to secondary survey	Explain adjuncts to secondary survey	C4						
102		Practical performance	Demonstrate assessment of vital signs independently		P4			1	OSCE	
103		Comply to SOPs	Comply to SOPs for the assessment of vital signs effectively			A4	Demo			
TOPIC: BRADY AND TACHYCARDIAS ALLOGRITHM										
105	Week-13	Bradycardia identification	Identify Bradycardia according to AHA	C1			Interactive Lecture/SGD	2	MCQs	3
106		Bradycardia management steps	Explain Bradycardia management steps according to AHA	C2						
107		tachycardia identification	Identify tachycardia according to AHA	C3						
108		tachycardia management steps	Explain tachycardia management steps according to AHA	C3						
109		Medication used	Describe Medication used in tachycardia and bradycardia according to AHA Algorithm	C3						
110		Decision making stable vs unstable patients	Describe difference between stable vs unstable patients	C4						

112		Practical performance	Identify tachycardia rhythms on ECG strip		P4		Demo	1	OSCE	
113		Comply to SOPs	Comply to SOPs for the Identification of tachycardia rhythms effectively			A4	Practical Demonstration			
TOPIC: NEW BORN LIFE SUPPORT										
114	Week-14	Definition	define new born	C1			Interactive Lecture/SGD	2	MCQs	5
115		Basic life support	Discuss AHA algorithm of basic life support for new born	C3						
116		Advance life support	Discuss AHA algorithm of advance life support for new born	C3						
117		Airway management	Describe airway management in new born	C4						
121		Practical performance	Perform new born CPR according to AHA guidelines on dummy		P4		Demo	1	OSCE	
122		Comply to SOPs	Maintain ethical consideration while performing CPR according to AHA guidelines on patient			A4	Practical Demonstration			
TOPIC:CARDIO PULMOARY RESUSCITATION										
123	Week-15	Definition	Define cardio pulmonary resuscitation	C1			Interactive Lecture/SGD	2	MCQs	5
124		Importance	Discus the importance of CPR	C3						
125		High quality CPR	Discus the steps of high quality CPR	C3						
		Contra indication	Discus the contra indication of CPR	C3						1
		Practical performance	Practical demonstration on application of endotracheal tube, independently							
		Ethical considerations	Maintain ethical consideration while performing endotracheal tube incertion , independently							
TOPIC: DEFIBRILLATION &CARDIOVERSION										
132		Introduction	Differentiate between defibrillation and cardioversion	C1			Interactive	2	MCQs	

133	Week-16	Indication	Discuss the indication of cardioversion and defibrillation	C3			Lecture/SGD			2
134		Types	Discuss the types of cardioversion	C3						
135		Procedure	Explain the procedure of defibrillation and cardioversion	C4						
136		Complication	Discus the Complication of defibrillation and cardioversion	C3						
138		Practical performance	Practical demonstration on operating defibrillation and cardioversion on dummy, independently		P4		Demo	1	OSCE	1
139		Comply to SOPs	Comply to SOPs while operating defibrillation and cardioversion on patient			A4	Practical Demonstration			

Recommended Books:

1. **ATLS by American College of Surgeons 9th edition.**
2. **ABC of major trauma**
3. **Current therapy of trauma & surgical care by Juan A. Asensio, Donald Trunkey**
4. **Updated AHA guideline**

ASSESSMENT BREAKDOWN				
S.No	**Topics**	**No of MCQs**	**No of OSPE / OSCE Stations**	**Static / Interactive**
1	Abdominal Trauma	3	1	Static
2	Anatomical & Physiological Changes During Pregnancy	3	1	Static
3	Trauma In Pregnancy	4	1	Static
4	Musculoskeletal Trauma	7	1	Static
5	Pediatric Trauma	3	1	Static
6	Geriatric Trauma	3	1	Interactive
7	Thermal Injuries	4	1	Static
8	Log Roll Of A Trauma Patient	5	1	Static
9	Near Drowning	3	1	Static
10	Transport Of A Traumatic Patient	5	1	Static
11	Psychosocial Trauma	4	1	Static
12	Cold Injuries	5	1	Static
13	Bomb Blast Injuries	4	1	Static
14	Spine & Spinal Cord Trauma	5	1	Static
15	Classifications Of Spinal Cord Injuries	4	1	Static
16	Abdominal And Pelvic Trauma Evaluation & Management	8	1	Interactive
Total	**16**	**70**	**16**	**16**

ANS-606 ANESTHESIA EQUIPMENT 3 (2+1)

COURSE DESCRIPTION

The purpose of this course is to equip students with comprehensive knowledge and understanding of anesthesia equipment and airway management. It aims to foster the development of professional skills by exploring the principles, functionality, and clinical applications of essential anesthesia devices. Through this curriculum, students will gain insight into oxygen delivery systems, supraglottic airway devices, ventilators, and monitoring tools, understanding their role in patient care. Designed to bridge theoretical knowledge with real-world clinical scenarios, this course ensures competency in the safe and effective use of anesthesia equipment in various healthcare settings.

LEARNING OBJECTIVES

Cognitive Domain

By the end of this course, students should be able to:

1. Discuss the historical development and recent advancements in anesthesia equipment and airway management.
2. Describe the structure, function, and principles of operation of various anesthesia devices, including oxygen delivery systems, ventilators, and airway management tools.
3. Explain the fundamental concepts related to anesthesia equipment, including gas supply, pressure systems, and circuit dynamics.
4. Identify different types of airway management devices, such as supraglottic airways, endotracheal tubes, and laryngoscopes, along with their clinical applications.
5. Discuss the mechanisms, advantages, and limitations of different anesthesia ventilation systems.

6. Describe the safety protocols, troubleshooting techniques, and infection control measures related to anesthesia equipment in clinical practice

Psychomotor Domain

By the end of this course, students should be able to:

1. Identify and set up anesthesia equipment, including oxygen delivery systems and airway devices.
2. Apply safety protocols and infection control measures in anesthesia practice.
3. Operate and troubleshoot anesthesia machines and ventilators.
4. Perform airway management techniques, including supraglottic and endotracheal intubation.
5. Use anesthesia monitoring devices to assess patient vitals.

Affective Domain

By the end of this course, students should be able to:

1. Demonstrate punctuality and professionalism.
2. Follow learning norms and respectful communication.
3. Uphold ethical and socially responsible behavior in academic and clinical settings

TABLE OF SPECIFICATIONS

ANESTHESIA EQUIPMENT

S.No	Weeks	Contents	Learning Outcome	Domain			MIT's	Time/ Hours	Assessment	No of Items
				C	P	A				
TOPIC: OXYGEN DELIVERY DEVICES										
1.	Week-	Introduction	Enlist the Oxygen delivery devices	C1			Interactive lecturer/	2	MCQs	4

2.	1	Working principle	Discuss the working principles, high- and low-pressure systems	C 2			SGDs			
3.		Safety and efficiency	Differentiate different oxygen sources in terms of safety and efficiency	C 4						
4.		Practical	Perform la Assist in setting up oxygen cylinders and wall-mounted oxygen systems.		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	1
5.		SOPs compliance	Show interest in learning about different oxygen supply devices.			A 4	Role Play			
TOPIC: SUPRAGLOTTIC AIRWAY DEVICES										
6.	Week-2	Introduction to Supraglottic airway devices	List the types of airways (OPA, NPA, LMA, etc.)	C 1			Interactive Lecture /SGDs	2	MCQs	3
7.		Indication and contraindication	Explain the indications, advantages, and disadvantages of all airways	C 2						
8.		Choosing airways in different scenario	Choose appropriate airway device for emergencies, elective and recovery of patients	C 3						
9.		Effectiveness	Compare the effectiveness of different airway devices in difficult airway management	C 4						
10.		Practical	Perform airway insertion under supervision.		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	1
11.		SOPs compliance	Value the selection of appropriate airway devices based on patient needs.			A 4	Role Play			
TOPIC: ENDOTRACHEAL TUBE (ETT), LARYNGOSCOPE &AIRWAY ADJUVANTS										
12.	Week-3	Definition	Define an endotracheal tube (ETT) and list its types (cuffed, uncuffed, reinforced, double lumen, etc.)	C 1			Interactive lecturer/ SGDs	2	MCQs	3
13.		Structure and indication	Discuss the structure, function, and indications for different types of ETTs	C 2						
14.		Selection and technique of insertion of ETT	Explain the proper selection, preparation, and technique of insertion of an ETT	C 2						
15.		Airway adjuvants	Recognize boogie, stylets and their proper use	C 2						
16.		Laryngoscope and its types	Explain a laryngoscope and its types (Macintosh, Miller, video laryngoscope, fiber-optic)	C 2						
17.		Practical	Perform intubation under supervision.		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	1
18.		SOPs compliance	Advocate regular practice of intubation techniques to ensure competency.			A 4	Role Play			
TOPIC: RESERVOIR BAGS AND FACE MASKS										
19.	Week-4	Components of AMBU and face mask	Recall the components of AMBU and Face mask	C 1			Interactive lecturer/ SGDs	2	MCQs	3
20.		Functions	Discuss the function and types of reservoir bags & face masks	C						

				2						
21.		Choosing appropriate size	Choose the appropriate reservoir bags and masks for neonates, pediatrics and adults	C 2						
22.		Practical	Independently apply and manage a face mask for ventilation.		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	1
23.		SOPs compliance	Actively participate in assembling and handling these devices.			A 4	Role Play			
TOPIC: MEDICAL GAS SUPPLY AND CYLINDERS										
24.	Week -5	Definition	Define a gas cylinder and medical gas supply system	C 1			Interactive lecturer/ SGDs	2	MCQs	4
25.		Color codes	Enlist the color codes and pressure systems	C 1						
26.		Capacity of cylinders	Discuss the capacity of different cylinders	C 2						
27.		Risks and handling	Discuss the potential risks associated with improper handling of gas cylinders	C 2						
28.		Practical	Perform cylinder handling and connection under supervision		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	2
29.		SOPs compliance	Show attentiveness while learning about gas cylinder color coding and pressure levels.			A 4	Role Play			
TOPIC:ANESTHESIA MACHINE										
30.	Week 6	Introduction	Define an anesthesia machine and list the components of anesthesia machine	C 1			Interactive lecturer/ SGDs	2	MCQs	4
31.		Pressure system	Explain the low pressure, intermediate pressure and high-pressure systems	C 2						
32.		Components	Discuss the components of anesthesia machine	C 2						
33.		Function of major components	Explain the function of O2 flush, Soda lime and scavenging system	C 2						
34.		Practical	Assist in daily machine checks and circuit connections.		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	1
35.		SOPs compliance	Advocate strict adherence to machine pre-use checklists.			A 4	Role Play			
TOPIC: VENTILATORS AND ITS TYPES										
36.	Week 7	Introduction	Define the types of ventilators (pneumatic, electronic)	C 3			Interactive lecturer/ SGDs	2	MCQs	7
37.		Different types of ventilators	Discuss different types of ventilators (Invasive and Non-Invasive ventilator)	C 1						
38.		Ventilation criteria	Discuss the criteria for ventilating a patient	C 3						
39.		Difference	Differentiate between various ventilators (Positive &Negative pressure	C						

			ventilator, high frequency ventilator, Neonatal ventilator)	3						
40.		Practical	Perform ventilator settings adjustments under supervision.		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	1
41.		SOPs compliance	Engage in discussions about different types of ventilators			A 4	Role Play			
TOPIC: MODES OF VENTILATION										
42.	Week -8	Introduction to modes	Define different ventilation modes (VCV, PCV, SIMV, APRV, HFOV, CMV, Spont, ASV, BiPAP, PSV, and CPAP.)	C 1			Interactive lecturer/ SGDs	2	MCQs	7
43.		Working Principles	Discuss the working principles of each mode	C 2						
44.		Basic concepts	Explain the Triggering, time, limit, cycling, PEEP, PIP and plateau pressure	C 2						
45.		Practical implication	Differentiate which ventilation mode is best suited for specific clinical conditions (Asthma, COPD, Pneumonia, ARDS)	C 3						1
46.		Practical	Perform adjustments to ventilation settings under supervision		P 4		Practical/Video Demonstration	2	OSPE/ OSCE	
47.		SOPs compliance	Advocate for evidence-based selection of ventilation modes.			A 4	Role Play			
TOPIC: BREATHING CIRCUITS										
48.	Week -9	Introduction	Define breathing circuits and types of breathing circuits (open, closed, semi-closed)	C 1			Interactive lecturer/ SGDs	2	MCQs	3
49.		Impact	Discuss differences between circuits and their impact on anesthesia	C 2						
50.		Mapleson circuits	Discuss the Mapleson breathing circuits	C 2						
51.		Differences	Differentiate the efficiency of different circuits in reducing dead space and rebreathing	C 3						
52.		Practical	Observe different types of breathing circuits.		P 4		Practical /Video Demonstration	2	OSPE/ OSCE	2
53.		SOPs compliance	Engage in discussions about the advantages and limitations of various circuits.			A 4	Role Play			
TOPIC: SPINAL & EPIDURAL NEEDLES, IV CANNULAE										
54.	Week -10	Introduction	Define types of spinal and epidural needles, and Enlist IV cannula sizes	C 1			Team Base Learning	2	MCQs	4
55.		Selection criteria	Explain needle designs and selection criteria of Spinal and Epidural needles	C 2						
56.		Flow rates and color codes	Discuss the flow rate and gauge of IV cannula along color codes	C 2						
57.		Risks and benefit analysis	Differentiate risks and benefits of different needle designs in regional anesthesia (PDPH)	C 3						
58.		Practical	Assist in preparing and positioning patients for spinal/epidural anesthesia.		P 4		Practical /Video Demonstration	2	OSPE/ OSCE	1

59.		SOPs compliance	Encourage strict adherence to aseptic techniques.			A 4	Role Play			
TOPIC: CAPNOGRAPHY & PULSE OXIMETRY										
60.	Week -11	Definition	Define Capnograph and Pulse oximeter	C 1			Interactive lecturer/ SGDs	4	MCQs	8
61.		Working principles	Explain the working principles of both	C 2						
62.		Importance	Discuss the importance of both in Perioperative settings	C 2						
63.		Interpretation	Interpret the capnography waveforms and SpO_2 readings	C 3						
64.		False readings	Explain the conditions in which pulse oximeter gave false readings	C 3						
65.		Different capnography readings	Differentiate normal and abnormal capnography readings for various clinical conditions	C 3						
66.		Summary	Summarize the content	C 2						
67.		Practical	Independently interpret and act on capnography and pulse oximetry readings.		P 4		Practical /Video Demonstration	2	OSPE/ OSCE	2
68.		SOPs compliance	Show interest in learning how to interpret waveforms and readings.			A 4				
TOPIC: NERVE STIMULATOR & GLUCOMETER										
69.	Week -12	Introduction	Define nerve stimulators and glucometer	C 1			Interactive lecturer/ SGDs	2	MCQs	5
70.		Working Principles	Discuss the working principle of Nerve stimulator and its role in perioperative management	C 2						
71.		Interpretation	Interpret Train-of-four" (TOF)	C 3						
72.		Importance of glucometer	Discuss the importance of Glucometer and its operating technique	C 1						
73.		Practical	Observe nerve stimulator and glucometer usage		P 4		Practical /Video Demonstration	4	OSPE/ OSCE	1
74.		SOPs compliance	Engage in discussions on nerve stimulation and glucose assessment techniques.			A 4	Role Play			
TOPIC: OT TABLE & SUCTION APPARATUS										
75.	Week -13	Introduction	Define Negative suction	C 1			Interactive lecturer/ SGDs	2	MCQs	3
76.			Recall the parts of OT tables and suction apparatus	C 1						
77.		Working principles	Discuss the working mechanisms and applications of different suction catheters	C 2						

78.		Appropriate pressure and catheter	Choose appropriate suction pressure and catheter in adults, paeds and neonates	C 3						
79.		OT table positioning	Differentiate, different OT table positioning techniques for specific surgeries	C 4						
80.		Practical	Perform suctioning under supervision.		P 4		Practical /Video Demonstration	4	OSPE	1
81.		SOPs compliance	Promote routine equipment checks before surgical procedure			A 4	Role Play			
TOPIC: AUTOCLAVE, TYPES, AND FUNCTION										
82.	Week -14	Introduction	Recall sterilization and define autoclave	C 1			Interactive lecturer/ SGDs	2	MCQs	4
83.		Types of Autoclaves	Discuss the types of Autoclaves	C 2						
84.		Principles	Explain the principles of autoclave	C 2						
85.		Importance	Explain the importance of autoclave in Hospital settings and anesthesia	C 2						
86.		Practical	Observe the autoclaving process.		P 4		Practical /Video Demonstration	2	OSPE/ OSCE	1
87.		SOPs compliance	Show interest in learning about different sterilization techniques.			A 4	Role Play			
TOPIC: DEFIBRILLATOR										
88.	Week -15	Introduction	Define a defibrillator and list its types (manual, semi-automatic, automatic)	C 1			Interactive lecturer/ SGDs	2	MCQs	5
89.		Working principles	Explain the working principle of defibrillators and their role in cardiac arrest management	C 2						
90.		Types	Discuss the monophasic and Biphasic defibrillator mechanism	C 2						
91.		Precautions	Discuss the SOPs and precautions while applying defibrillator	C 2						
92.		Practical	Observe the functioning of a defibrillator		P 4		Practical /Video Demonstration	4	OSPE/ OSCE	1
93.		SOPs compliance	Show willingness to learn about defibrillator operation.			A 4	Role Play			
TOPIC: INFUSION PUMP & VAPORIZER										
94.	Week -16	Definition	Define an infusion pump	C 1			Interactive lecturer/ SGDs	2	MCQs	3
95.		Types	Explain its types (volumetric, syringe, PCA)	C 2						
96.		Working Principles	Explain the working principle, components, and clinical applications	C 2						

97. 98.		Troubleshooting	Interpret correct setup, programming, and troubleshooting of an infusion pump	C 3						
99.		Vaporizer	Define an anesthetic vaporizer and list its types (variable bypass, desflurane vaporizer)	C 3						
100 101		Working principle of Vaporizer	Discuss the working principles, temperature compensation, and output control	C 4						
102		Practical	Assist in priming an infusion pump and refilling a vaporizer		P 4		Practical /Video Demonstration	1	OSPE/ OSCE	1
103		SOPs compliance	Show responsibility in ensuring accurate dosing			A 4	Role Play			

Recommended Books

1. Understanding Anesthetic Equipment & Procedures A Practical Approach: Dwarkadas K Baheti 1st Edition
2. Understanding Anesthetic Equipment: Jerry A. Dorsch MD & Susan E. Dorsch MD 5th Edition
3. Essentials of Anesthetic Equipment: Baha Al-Shaikh & Simon Stacey 4th Edition

ASSESSMENT BREAKDOWN

S.No	Topics	No of MCQ	No of OSPE / OSCE Stations	Static / Interactive
1	Oxygen Supply Devices	4	1	Interactive
2	Supraglottic Airway devices	3	1	Interactive
3	Endotracheal Tube (ETT), Laryngoscope &airway adjuvants	5	1	Interactive
4	Reservoir Bags and Face Masks	3	1	Interactive
5	Medical Gas Supply and Cylinders	4	0	Interactive
6	Anesthesia Machine	4	1	Interactive
7	Ventilators and Its Types	7	1	Interactive
8	Modes of Ventilation	7	0	Interactive
9	Breathing Circuits	3	1	Interactive

10	Spinal & Epidural Needles, IV Cannula	4	1	Interactive
11	Capnograph & Pulse Oximeter	5	1	Interactive
12	Nerve Stimulator & Glucometer	4	1	Interactive
13	OT Table & Suction Apparatus	5	1	Interactive
14	Autoclave, Types, and Function	4	1	Interactive
15	Defibrillator	5	1	Interactive
16	Infusion Pump & Vaporizer	3	1	Interactive
Total	**16**	**70**	**14**	**14**

ICT - 604 CLINICAL LABORATORY INVESTIGATIONS 3(2+1)

COURSE DESCRIPTION

The Clinical Laboratory Investigations course is tailored for BS Emergency Care Technology and BS Respiratory Therapy and Intensive Care Technology students, focusing on the essential diagnostic techniques and tools used in critical care settings. This three-credit-hour course, over a 16-week semester, aims to equip students with the theoretical knowledge and practical skills necessary for analyzing and interpreting critical care diagnostics. Emphasis is placed on the diagnostic processes related to various organ systems, metabolic functions, and the use of point-of-care devices. The course also covers the handling and interpreting laboratory tests to support critical clinical decisions.

LEARNING OBJECTIVES

Cognitive Domain

By the end of this course, students should be able to:

1. Describe the principles, methodologies, and clinical significance of common laboratory investigations, including hematology, microbiology, biochemistry, and immunology.
2. Explain the proper sample collection, handling, storage, and transport techniques to ensure accurate laboratory results.
3. Discuss the interpretation of laboratory results in the context of various diseases and conditions.
4. Describe the quality control measures and good laboratory practices essential for maintaining laboratory accuracy and reliability.
5. Explain the biosafety levels, infection control practices, and risk assessment in a clinical laboratory setting.

Psychomotor Domain

By the end of this course, students should be able to:

1. Perform proper specimen collection techniques, including venipuncture, capillary blood sampling, and urine, sputum, and swab collection, following standard operating procedures (SOPs).
2. Conduct basic and advanced laboratory investigations such as blood glucose testing, complete blood count (CBC), urinalysis, and arterial blood gas (ABG) analysis.
3. Follow biosafety and infection control protocols while handling biological specimens to prevent contamination and exposure risks.

Affective Domain

By the end of this course, students should be able to:

1. Laboratory schedules and deadlines.
2. Follow standard operating procedures (SOPs) and ethical guidelines in laboratory investigations.
3. Maintain professional conduct and effective communication with peers, faculty, and healthcare professionals in a laboratory setting.
4. Exhibit respect for patient confidentiality and the ethical handling of biological samples.
5. Uphold a commitment to continuous learning and quality improvement in clinical laboratory practices.

TABLE OF SPECIFICATIONS

CLINICAL LABORATORY INVESTIGATIONS

S.No	Week	Content	Learning Outcome	Domain			MIT's	Time/ Hours	Assessment	No of items
				C	P	A				
TOPIC: INTRODUCTION TO LABORATORY INVESTIGATIONS										
1.	Week-1	Definition	Define laboratory investigations	C1			Interactive lecturer/ SGDs	2	MCQs	
2.		Applications	List the generic applications of laboratory investigations	C2						
3.		Classification	Discuss the classification based on hospital lab services	C2						
4.		Common investigations	Discuss the clinical investigation frequently and infrequently required	C2						
5.		Types of sample	Explain the different types of samples used for laboratory investigation	C3						
6.		Blood collection tubes	Discuss the different types of blood collection tubes used.	C4						
7.		Practical performance	Demonstrate Techniques for proper labeling, storage, and transportation of specimens.		P4		Demo	1	OSPE/ OSCE	
8.		Comply to SOPs	comply with SOPs for performing the procedure of urine, sputum, and swab collection			A4	Practical Demo			
TOPIC: BLOOD GLUCOSE DETERMINATION										
9.	Week-2	Introduction	Define blood sugar and HbA1C	C1			Interactive lecturer/ SGDs	2	MCQs	
10.		Indications	Enlist the indications of HbA1C	C2						
11.		Components	Discuss the different components of blood sugar and HbA1C	C3						
12.		Clinical presentation	Describe the effects of hyper and hypoglycemia	C4						
13.		Interpretation	Interpret the blood sugar and HbA1C results	C5						
14.		Practical performance	Perform the procedure of glucometery independently		P4		Video Demo	1	OSPE/ OSCE	
15.		Comply to SOPs	Comply to SOPs for performing the procedure of glucometery independently			A4				
TOPIC: ARTERIAL BLOOD GASES										
16.	Week-3	Introduction	Define the basic terms and terminologies used in ABGs	C1			Interactive lecturer/ SGDs	2	MCQs	
17.		Indications	Enlist the indications of ABGs	C2						
18.		Components	Discuss the different components of ABGs	C2						

19.		Clinical presentation	Describe the effects of acidosis and alkalosis on the different systems of the body	C3						
20.		Acid-base regulation	Discuss acid-base regulation	C3						
21.		Interpretation	Interpret various investigations for the diagnosis of acid-base imbalance	C4						
22.		Practical performance	Video Demonstration of arterial blood sampling techniques effectively		P4		Video Demo	1	OSPE/ OSCE	
23.		Comply to SOPs	Comply to SOPs for the procedure of arterial blood gases effectively			A4				
TOPIC: PANCREATIC FUNCTIONS TESTS										
24.	Week-4	Introductions	Define pancreatic function tests	C1			Interactive lecturer/ SGDs	2	MCQs	
25.		Function of pancreas	Classify the functions of the pancreas	C2						
26.		Importance of amylase	Explain the importance of serum amylase	C3						
27.		Clinical limitations of amylase	Discuss the clinical limitations of using serum amylase	C3						
28.		Importance of Lipase	Discuss the Importance of Serum Lipase	C3						
29.		Benefits of serum lipase	Enlist the Benefits of serum lipase	C4						
30.		Practical performance	Video demonstration on amylase and serum lipase		P4		Video Demo	1	OSPE/ OSCE	
31.		Comply to SOPs	Comply to SOPs for performing the procedure of amylase and serum lipase			A4				
TOPIC: COMPLETE BLOOD COUNT (CBC)										
32.	Week-5	Introduction	Introduce complete blood count (CBC)	C1			Interactive lecturer/ SGDs	2	MCQs	
33.		Indications	Enlist the indications of CBC	C1						
34.		Role of CBC	Discuss the role of CBC in the diagnosis and management of diseases	C1						
35.		Main parameter	Explain the main parameters measured in CBC	C3						
36.		Investigations	Interpret various investigations for the diagnosis of different types of anemia	C3						
37.		Practical performance	Video demonstration on COMPLETE BLOOD COUNT(CBC)		P4		Video Demo	1	OSPE/ OSCE	
38.		Comply to SOPs	Comply with SOPs for performing COMPLETE BLOOD COUNT (CBC)			A4				
TOPIC: CARDIAC BIOMARKERS										
39.	Week-6	Definition	Define biomarker and cardiac biomarkers	C1			Interactive lecturer/ SGDs	2	MCQs	
40.		Classification	Discuss the classification of cardiac biomarkers	C2						
41.		Current cardiac biomarkers	Explain the current biomarkers and test panels used	C3						
42.		Troponin, Myoglobin, and CK	Explain Troponin, creatine kinase, and myoglobin as cardiac biomarkers	C4						

43.		Mechanisms	Discuss the mechanisms of releasing the troponin, myoglobin, and CK into blood circulation	C3						
44.		Practical performance	Video demonstration on cardiac biomarkers Independently		P4		Demo	1	OSPE/ OSCE	
45.		Comply to SOPs	Comply with SOPs for performing cardiac biomarkers test Independently			A4				
TOPIC: PERIPHERAL BLOOD SMEAR										
46.	Week-7	Introduction	Define peripheral blood smear	C1			Interactive lecturer/ SGDs	2	MCQs	
47.		Indications	Enlist the indications of peripheral blood smear	C2						
48.		Method	Discuss the method of a peripheral blood smear preparation	C3						
49.		Purpose of PBS	Discuss the information obtained from a peripheral blood smear	C3						
50.		RBCs, WBC, and platelets Morphology	Explain the morphology of Red, white blood cells and platelets	C3						
51.		Types of parasites on Blood film	Discuss the parasite present on the blood film	C3						
52.		Practical performance	Video demonstration on peripheral blood smear		P4		Video Demo	1	OSPE/ OSCE	
53.		Comply to SOPs	Comply with SOPs for peripheral blood smear			A4				
TOPIC: BLOOD GROUP AND CROSS MATCH										
54.	Week-8	Definition	Define blood group and cross-match	C1			Interactive lecturer/ SGDs	2	MCQs	
55.		Classification	Discuss the classification of the blood group system	C3						
56.		Blood group systems	Explain the ABO and Rh systems	C3						
57.		Method &procedure	Discuss the Methods and procedure of blood group identification	C4						
58.		Principle and types	Discuss the principles and types of cross-matching	C3						
59.		Result Interpretation	Interpret blood grouping result	C4						
60.		Practical performance	Perform the procedure of blood grouping independently		P4		Practical Demo	1	OSPE/ OSCE	
61.		Comply to SOPs	Comply with SOPs for blood grouping and cross-match independently			A4				
TOPIC: STOOL EXAMINATION										
62.	Week-9	Introduction	Define the macroscopic examination of stool and its clinical importance.	C4			Interactive lecturer/ SGDs	2	MCQs	
63.		Significance of WBCs and RBCs in Microscopic Examination	Discuss the significance of WBCs and RBCs in stool samples under a microscope.	C3						
64.		Examination for Ova and Parasites	Explain the methods and significance of examining stools for ova and parasites.	C3						
65.		Role of Stool Examination in	Explain how stool examination helps in diagnosing gastrointestinal infections	C2						

		Diagnosing GI Infections								
66.		Practical performance	Video demonstration on stool R/E independently		P4		Demo	1	OSPE/ OSCE	
67.		Comply to SOPs	Comply with SOPs for stool R/E independently			A4				
TOPIC: RENAL FUNCTION TESTS										
68.	Week-10	Introduction	Define renal function tests.	C1			Interactive lecturer/ SGDs	2	MCQs	
69.		Importance and applications	List the generic applications of renal function tests.	C3						
70.		Common renal function tests	Describe the common renal function tests (Serum Creatinine, BUN, GFR)	C2						
71.		Urinalysis	Explain Urinalysis	C3						
72.		pathophysiology of azotemia	Illustrate the Basic pathophysiology of azotemia	C3						
73.		Creatinine clearance and its importance	Discuss Creatinine clearance and its importance	C4						
74.		Interpretation of results	Interpret the results of renal function tests.	C3						
75.		Practical performance	Video demonstration on accurate and reliable measurements of 24-hour urine collection and protein-to-creatinine ratio		P4		Demonstration	1	OSPE/ OSCE	
76.		Comply to SOPs	Comply to SOPs for collecting urine sample effectively			A4				
TOPIC: LIVER FUNCTIONS TEST										
77.	Week-11	Introduction	Define liver function testing	C1			Interactive lecturer/ SGDs	2	MCQs	
78.		LFTs in hepatitis	Discuss liver function testing	C3						
79.		LFTs in cholecystitis	Discuss hepatocellular injuries	C3						
80.		LFTs in Cholestasis	Explain Hapatobiliary injury	C3						
81.		Importance	Discuss the diagnostic approach to cholestasis, hyperbilirubinemia, and hepatocellular injuries	C4						
82.		Interpretation	Interpret the result of LFTs	C3						
83.		Practical performance	Video demonstration on LFTs		P4		Video Demo	1	OSPE/ OSCE	
84.		Comply to SOPs	Comply with SOPs for collecting samples for LFTs effectively			A4				
TOPIC: BETA HCG										
85.	Week-12	Introduction	Introduction to beta HCG	C1			Interactive lecturer/ SGDs	2	MCQs	
86.		Indications	Enlist the indications of beta HCG	C3						
87.		Structure and function	Discuss the structure and function of the beta HCG	C2						
88.		Procedure	Explain the procedure of beta HCG test	C3						
89.		Interfering factors	Discuss the factors interfering the results of beta HCG	C3						
90.		Interpretation	Interpret the result of beta HCG	C4						
91.		Practical performance	Practical demonstration of Beta HCG testing independently		P4		Demo	1	OSPE/ OSCE	

92.		Comply to SOPs	Comply with SOPs for performing Beta HCG testing independently			A4				
TOPIC: TORCH PROFILE										
93.	Week-13	Definition	Define TORCH profile	C1			Interactive lecturer/ SGDs	2	MCQs	
94.		types	Discuss the clinical manifestations of TORCH infections	C2						
95.		Pathophysiology	Explain the effects of TORCH infections on pregnancy	C3						
96.		diagnostic criteria	Discuss the diagnostic criteria of TORCH infections	C3						
97.		Practical performance	Video demonstration on TORCH profile for infections in pregnancy.		P4		Demonstration		OSPE/ OSCE	
98.		Comply to SOPs	Comply with SOPs for performing TORCH profile independently			A4				
TOPIC: LIPID PROFILE										
99.	Week-14	Introduction	Define Lipid profile test	C1			Interactive lecturer/ SGDs	1	MCQs	
100.		tests	Enlist various tests of lipid profile	C3						
101.		procedure	Explain the procedure of lipid profile tests	C3						
102.		patient care	Discuss the pre and post-test patient care of lipid profile test	C4						
103.		clinical implications	Discuss the clinical implications of lipid profile tests	C3						
104.		Practical performance	Video demonstration on lipid profile		P4				OSPE/ OSCE	
105.		Comply to SOPs	Comply with SOPs for lipid profile			A4				
TOPIC: SERUM ELECTROLYTES										
106.	Week-15	Introduction	Define the serum electrolytes	C1			Interactive lecturer/ SGDs	2	MCQs	
107.		Indications	Enlist the indications of serum electrolyte testing	C3						
108.		Components	Discuss the different components of serum electrolytes	C3						
109.		clinical presentation	Describe the effects of electrolyte imbalance on the different systems of the body	C4						
110.		Acid base regulation	Discuss the effects of serum electrolytes on acid-base regulation	C3						
111.		Interpretation	Interpret the reports of serum electrolytes	C3						
112.		Practical performance	Video demonstration on serum electrolytes		P4			1	OSPE/ OSCE	
113.		Comply to SOPs	Comply to SOPs for serum electrolytes			A4				
TOPIC: THYROID FUNCTION TEST										
114.	Week-16	Introduction	Define Thyroid function tests	C1			Interactive lecturer/ SGDs	2	MCQs	
115.		Indications	Enlist the indications of TFTs	C3						
116.		Components	Explain the clinical implications of Thyroid Stimulating Hormone (TSH)	C3						
117.		Clinical presentation	Discuss the significance of Thyrotropin-releasing hormone (TRH)	C4						
118.		Interpretation	Interpret the reports of TFTs	C3						
119.		Practical performance	Video demonstration on TFTs		P4		Demonstration	1	OSPE/ OSCE	

120.		Comply to SOPs	Comply with SOPs for TFTs			A4				

Recommended Books:

1. District Laboratory Practice in Tropical Countries by Monica Cheesbrough
2. Clinical Laboratory Medicine Lippincott Williams & Wilkins (LWW)
3. ICU Book Paul Merino
4. EKG book, Dale and dubbin.
5. AFIP manual of laboratory medicine,3rd edition

ASSESSMENT BREAKDOWN

S.No	Topics	No of MCQ	No of OSPE / OSCE Stations	Static / Interactive
1	Introduction to laboratory investigations	5	1	Static
2	Blood glucose determination	3	1	Static
3	Arterial blood gases	10	1	Static
4	Pancreatic Functions tests	2	1	Static
5	Complete blood count	4	1	Static
6	Cardiac biomarkers	6	1	Static
7	Peripheral blood smear	5	1	Static
8	Blood group and cross match	3	1	Interactive
9	Stool examination	4	1	Static
10	Renal function tests	6	1	Static
11	Liver functions test	5	1	Static
12	Beta HCG	4	1	Interactive
13	Torch profile	4	1	Static
14	Lipid profile	3	1	Static
15	Serum electrolytes	4	1	Static
16	Thyroid function test	2	1	Static
Total	**16**	**70**	**16**	**16**

ECT – 605 BURNS & TOXICOLOGY 3(2+1)

COURSE DESCRIPTION

This course provides an in-depth understanding of the pathophysiology, assessment, and management of burns and toxicological emergencies. It covers the classification of burns, fluid resuscitation, wound care, and complications associated with burn injuries. Additionally, the course explores various toxicological emergencies, including poisoning, overdose, and hazardous material exposure. Emphasis is placed on pre- hospital and hospital interventions, critical decision-making, and patient safety in burn and toxicology management.

LEARNING OBJECTIVES

Cognitive Domain

By the end of this course, students should be able to:

1. Explain the pathophysiology, classification, and severity of burn injuries.
2. Identify the principles of burn management, including fluid resuscitation, wound care, and pain control.
3. Describe common toxicological emergencies, their mechanisms of action, and clinical manifestations.
4. Discuss the principles of decontamination, antidote administration, and supportive care in toxicology cases.

Psychomotor Domain

By the end of this course, students should be able to:

1. Demonstrate empathy and compassion when managing burn and poisoning patients.
2. Exhibit professionalism and ethical decision-making in pre- hospital and hospital burn/toxicology cases.
3. Develop effective communication skills when educating patients and families on burn prevention and poison control

Affective Domain

By the end of this course, students should be able to:

1. Perform accurate assessment and triage of burn injuries based on severity and extent.
2. Demonstrate proper techniques for burn wound care, dressing application, and pain management.
3. Execute airway management and fluid resuscitation in critically burned patients.
4. Apply appropriate decontamination procedures for toxic exposures, including chemical and biological agents.
5. Administer antidotes and supportive treatments for specific poisoning cases, following established protocols.

TABLE OF SPECIFICATIONS

BURNS & TOXICOLOGY

S. No	week	Content	Learning Outcome	Domain			MIT'S	Time/ Hour	Assessment	No items
				C	P	A				
TOPIC: INTRODUCTION TO BURNS										
1.	Week-1	Introduction	Introduction to burns	C1			Interactive lecturer/ SGDs	2	MCQs	
2.		Causes	Enlist causes of burn injuries	C3						
3.		Pathophysiology	Explain pathophysiology of burn injuries	C3						
4.		Circulatory changes	Discuss the circulatory changes occurring due to burn injuries	C4						
5.		Mechanical block	Explain mechanical block occurring due to burn injuries	C3						
6.		Practical demonstration	Practical demonstration on Identification of different types of burns		P4			1	OSPE/ OSCE	
7.		comply to SOPS	comply to SOPS for the identification of various degree of burns			A4	Practical Demo			
TOPIC: IMMEDIATE CARE OF BURN PATIENTS										
8.	Week-2	Introduction	Introduction to the immediate care of burn patients	C1			Interactive lecturer/ SGDs	2	MCQs	
9.		Classification	Discuss the classification of immediate care into pre hospital and hospital care	C3						
10.		Recognition	Explain the recognition of a potentially burned airway	C3						
11.		Clinical features	Discuss the clinical features of inhalational injury	C3						
12.		Management	Explain the immediate management of an inhalational injury	C4						
13.		Video demonstration	Video demonstration on the utilization fire extinguisher and fire blankets in fire hazards		P4			1	OSPE/ OSCE	
14.		comply to SOPS	Comply to SOPs for utilization fire extinguisher and fire blankets			A4				
TTOPIC: BURN CLASSIFICATION AND ASSESSMENT										
15.	Week-3	Introduction	Introduction to classification of burn injuries	C1			Interactive lecturer/ SGDs	2	MCQs	
16.		Types	Discuss the classification on basis of types	C3						
17.		Depth	Explain the classification on basis of depth of burn injuries	C3						
18.		Electric burns	Explain the mechanism of burn injuries due to electrical burns	C3						
19.		Chemical burns	Explain the mechanism of burn injuries due to chemical burns	C3						
20.		Assessment	Explain the assessment of burn injury size through palm method and Rule of 9	C3						
21.		Practical demonstration	Practical demonstration on the application of rule of nine for assessment of total body surface area Burn		P4			1	OSPE/ OSCE	
22.		comply to SOPS	Comply to SOPs for the application of rule of nine for assessment of total Body Surface area burn			A4				

			independently							
TOPIC: FLUID RESUSSCITATION AND ENERGY BALANCE IN BURN PATIENTS										
23.	Week-4	Introduction	Introduction of different types of fluids that can be given to burn patients	C1			Interactive lecturer/ SGDs	2	MCQs	
24.		Principle	Explain the principles for fluid resuscitation	C3						
25.		Indications	Discuss the indications for fluid resuscitation	C2						
26.		Parkland formula	Explain the parkland formula for crystalloid resuscitation	C3						
27.		Muir and Barcley formula	Explain Muir and Barcley formula for colloid resuscitation	C4						
28.		Monitoring	Discuss the monitoring of fluid resuscitation	C3						
29.		Definition	Define energy balance	C1						
30.		Assessment	Explain the assessment of energy requirement	C2						
31.		Objectives	Discuss the objectives of nutritional management	C3						
32.		Goals	Explain the goals of nutritional management	C3						
33.		Curreri formula	Explain Curreri formula for daily caloric requirement of burn patients	C3						
34.		Devies formula	Explain Devies formula for daily caloric requirement of burn patients	C3						
35.		Practical performance	Video demonstration on escharotomy in patients with circumferential full thickness burns		P4		Practical Demo	1	OSPE/ OSCE	
36.		Comply to SOP	Comply to SOPs for escharotomy			A4				
TOPIC: TREATING THE BURN WOUND										
37.	Week-5	Introduction	Introduction to treatment options of burns	C1			Interactive lecturer/ SGDs	2	MCQs	
38.		Escharotomy	Discuss escharotomy procedure	C4						
39.		Key features	Explain key features for escharotomy placement	C3						
40.		Dressing	Explain the types of dressings used for burn wounds	C3						
41.		Contaminated burn wound	Discuss the management of contaminated burn wound	C4						
42.		Additional aspects	Describe the additional aspects of treating the burn patient	C4						
43.		Practical performance	Practical/Video demonstration on various pharmacological dressings in burn		P4			1	OSPE/ OSCE	
44.		Comply to SOP	Comply to sops for pharmacological dressings in burn			A4				
TOPIC: SURGERY FOR THE ACUTE BURN WOUND										
45.	Week-6	Indications	Discuss the indications for surgery of burn wounds	C1			Interactive lecturer/ SGDs	2	MCQs	
46.		Indications	Discuss the criteria for surgical treatment of burn wounds	C3						
47.		Deep burn wounds	Explain the surgery for deep burn wounds	C4						
48.		Cosmetic surgeries	Explain Z-plasty ,free flaps and tissue expansion	C3						

49.		Hypertrophic scars	Explain the use pressure garments for hypertrophic scars	C3						
50.		Practical performance	Video demonstration on dressing and debridement in full thickness burns		P4			1	OSPE/ OSCE	
51.		Comply to SOP	Comply to SOPs for dressing and debridement			A4	Practical Demo			
TOPIC: NON THERMAL BURN INJURIES										
52.	Week-7	Definition	Define non thermal burn injuries	C1			Interactive lecturer/ SGDs	2	MCQs	
53.		Electric Injuries	Explain electrical injuries	C2						
54.		High tension Electric burns	Explain the classification of high tension electric burns	C3						
55.		Low tension Electric burns	Explain the classification of low tension electric burns	C3						
56.		Chemical burns	Explain chemical injuries	C3						
57.		Classification	Discuss the classification of chemical injuries	C4						
58.		Management	Explain the management of non-thermal burn injuries	C3						
59.		Ionizing radiation injury	Explain the types and management of ionizing radiation injury	C4						
60.		Practical performance	Practical/Video demonstration on ECG monitoring in electrical burns		P4		Demonstration	1	OSPE/ OSCE	
61.		Comply to SOP	Comply to SOPs for ECG monitoring			A4				
TOPIC: INTRODUCTION TO TOXICOLOGY										
62.	Week-8	Introduction	Introduction of toxicology	C1			Interactive lecturer/ SGDs	2	MCQs	
63.		Routes of poisoning	Discuss different routes of poisoning	C3						
64.		Causes	Explain the causes of drug overdose	C3						
65.		Investigation	Discuss the investigations performed for patients with poisoning	C4						
66.		Differential diagnosis	Explain the differential diagnosis related to poisoning	C3						
67.		Management	Explain the general and immediate management of cases with poisoning	C4						
68.		Practical performance	Video demonstration on identification and differentiation of common toxidromes		P4			1	OSPE/ OSCE	
69.		Ethical considerations	Maintain ethical considerations while assessing toxidromes			A4				
TOPIC: INTRODUCTION TO TOXICOLOGY										
70.	Week-9	Decontamination	Explain different procedures used for decontamination	C4			Interactive lecturer/ SGDs	2	MCQs	
71.		Management	Discuss the management of patients with special case	C3						
72.		Antidotes	Discuss the antidotes specific to poisons	C3						
73.		Legal pitfalls	Discuss legal pitfalls of patients with poisoning	C2						
74.		Practical performance	Practical demonstration on gastric decompression in patients with acute poisoning		P4			1	OSPE/ OSCE	

75.		Informed consent	Obtain informed consent before gastric decompression			A4				
TOPIC: ORGANOPHOSPHATE POISONING										
76.	Week-10	Definition	Define organophosphates	C1			Interactive lecturer/ SGDs	2	MCQs	
77.		Mechanism	Explain the mechanism of toxicity of organophosphates	C3						
78.		Modes	Discuss modes of toxicity	C2						
79.		Clinical features	Explain the clinical features of patients with organophosphate poisoning	C3						
80.		Presentation and assessment	Discuss the presentation and assessment of patients with organophosphate poisoning	C3						
81.		Investigations	Discuss the investigations performed for patient with organophosphate poisoning	C4						
82.		diagnosis	Discuss the diagnosis of patient with organophosphate poisoning	C3						
83.		Management	Explain the management of patients with organophosphate poisoning	C4						
84.		Practical performance	Practical demonstration on the application activated charcoal in acute poisoning		P4		Demonstration	1	OSPE/ OSCE	
85.		Comply to SOP	Comply to SOPs for application activated charcoal in acute poisoning independently			A4				
TOPIC: ANTICONVULSANTS DRUGS TOXICITY										
86.	Week-11	Definition	Define Anticonvulsants	C1			Interactive lecturer/ SGDs	2	MCQs	
87.		Mechanism	Explain the mechanism of action of anticonvulsants	C3						
88.		Etiology	Discuss the etiology of anticonvulsants overdose	C3						
89.		Pathophysiology	Explain the pathophysiology of anticonvulsants toxicity	C3						
90.		diagnosis	Discuss the laboratory diagnosis of anticonvulsants toxicity	C4						
91.		Management	Explain the management of patients with anticonvulsants toxicity	C3						
92.		Practical performance	Identification of specific antidotes for various poisoning		P4			1	OSPE/ OSCE	
93.		comply to SOP	Comply to SOPs for identification of antidotes independently			A4				
TOPIC: BETA BLOCKER AND CALCIUM CHANNEL BLOCKER TOXICITY										
94.	Week-12	Definition	Define Beta blocker and Calcium channel blockers	C1			Interactive lecturer/ SGDs	2	MCQs	
95.		Mechanism	Explain the mechanism of action of beta blockers and calcium channel blockers	C3						
96.		etiology	Discuss the etiology of beta blockers and calcium channel blockers	C2						
97.		Presentation and	Discuss Presentation and assessment of patients with	C3						

		assessment	beta blockers and calcium channel blockers							
98.		pathophysiology	Explain the pathophysiology of beta blockers and calcium channel blockers	C3						
99.		laboratory diagnosis	Discuss the laboratory diagnosis of beta blockers and calcium channel blockers overdose	C4						
100		Management	Explain the management of patients with beta blockers and calcium channel blockers overdose	C4						
101		Practical performance	Practical demonstration on preparation of first aid kit for poisoning patients		P4			1	OSPE/ OSCE	
102		comply to SOP	Comply to SOPs for preparation of first aid kit for poisoning patients independently			A4				
TOPIC: BENZODIAZEPINES TOXICITY										
103	Week-13	Definition	Define Benzodiazepines	C1			Interactive lecturer/ SGDs	2	MCQs	
104		Mechanism	Discuss the mechanism of action of benzodiazepines	C2						
105		Etiology	Discuss the etiology of benzodiazepines overdose	C3						
106		Pathophysiology	Explain the pathophysiology of benzodiazepines toxicity	C3						
107		Presentation and assessment	Discuss Presentation and assessment of patients with benzodiazepines toxicity	C3						
108		laboratory diagnosis	Discuss the laboratory diagnosis of benzodiazepine toxicity	C4						
109		Management	Explain the management of patients with benzodiazepines toxicity	C4						
110		Practical performance	Practical demonstration on application of urinary catheterization		P4		Demonstration	1	OSPE/ OSCE	
111		Comply to SOPS	Comply to SOPs for application of urinary catheterization independently			A4				
TOPIC: ASPIRIN TOXICITY										
112	Week-14	Definition	Define Aspirin	C1			Interactive lecturer/ SGDs	2	MCQs	
113		Mechanism	Discuss the mechanism of action of aspirin	C3						
114		Etiology	Discuss the etiology of aspirin overdose	C3						
115		Pathophysiology	Explain the pathophysiology of aspirin toxicity	C4						
116		Presentation and assessment	Discuss Presentation and assessment of patients with aspirin toxicity	C3						
117		laboratory diagnosis	Discuss the laboratory diagnosis of aspirin toxicity	C3						
118		Management	Explain the management of patients with aspirin toxicity	C4						
119		Practical performance	Practical demonstration of application of NG tube independently		P4		Demonstration	1	OSPE/ OSCE	
120		Comply to SOPs	Comply to SOPs for application of NG tube effectively			A4				
TOPIC: NSAIDS AND ALCOHOL TOXICITY										

121	Week-15	Introduction	Give introduction about NSAIDs and alcohol	C1			Interactive lecturer/ SGDs	2	MCQs	
122		Mechanism	Discuss the mechanism of action of NSAIDs and alcohol	C3						
123		Etiology	Discuss the etiology of NSAIDs overdose	C3						
124		Pathophysiology	Explain the pathophysiology of NSAIDs and alcohol toxicity	C4						
125		Presentation and assessment	Discuss Presentation and assessment of patients with NSAIDs and alcohol toxicity	C3						
126		laboratory diagnosis	Discuss the laboratory diagnosis of NSAIDs and alcohol toxicity	C3						
127		Management	Explain the management of patients with NSAIDs and alcohol toxicity	C4						
128		Practical performance	Practical demonstration on application of endotracheal tube for metabolic poisoning independently		P4			1	OSPE/ OSCE	
129		Comply to SOPs	Comply to SOPs for application of endotracheal tube for metabolic poisoning effectively			A4				
TOPIC: MANAGEMENT OF SNAKE AND SCORPION BITE										
130	Week-16	Introduction	Give introduction about snake and scorpion bite	C1			Interactive lecturer/ SGDs	2	MCQs	
131		Sign and symptoms	Discuss the sign and symptoms of snake and scorpion bite	C3						
132		Types	Discuss the types of snake venom	C3						
133		Toxic effect	Explain the toxic effect of snake and scorpion bite	C4						
134		Diagnosis	Discuss the lab diagnosis of snake and scorpion bite	C3						
135		Management	Explain the management for snake and scorpion bite	C3						
136		Practical performance	Practical demonstration on assessment of urine output for monitoring toxicity in Poisoning Patients independently		P4		Demonstration	1	OSPE/ OSCE	
137		Comply to SOPs	Comply to SOPs for assessment of urine output for monitoring toxicity in Poisoning Patients effectively			A4				

Recommended Books

1. Baily & Love Short Practice of Surgery
2. ABC of Burns
3. Emergencies in critical care
4. ABC of Emergency Medicines
5. First Aid for the Emergency Medicines Board

ASSESSMENT BREAKDOWN				
S.No	**Topics**	**No of MCQ**	**No of OSPE / OSCE Stations**	**Static / Interactive**
1	Introduction to burns	5	1	Static
2	Immediate care of burn patients	2	1	Static and Interactive
3	Burn classification and assessment	7	1	Interactive
4	Fluid resuscitation in burn patients	4	1	Static
5	Energy balance in burn patients	3	1	Interactive
6	Treating the burn wound	3	1	Static
7	Surgery for the acute burn wound	4	1	Static
8	Non thermal burn injuries	6	1	Static
9	Introduction to toxicology	9	1	Static
10	Organophosphate poisoning	5	1	Static
11	Anticonvulsants drugs toxicity	4	1	Static/ Interactive
12	Beta blocker and calcium channel blocker toxicity	5	1	Interactive
13	Benzodiazepines toxicity	3	-	-
14	Aspirin toxicity	3	-	-
15	Nsaids and alcohol toxicity	5	1	Interactive
16	Management of snake and scorpion bite	2	1	Static
Total	**16**	**70**	**14**	**14**

THE END