



KHYBER MEDICAL UNIVERSITY

RESPIRATORY THERAPY AND INTENSIVE CARE TECHNOLOGY CURRICULUM

YEAR TWO STUDY GUIDE

(SEMESTER 3)

16 Weeks Activity Planner

2022-23

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

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Introduction



KMU VISION

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

KMU MISSION

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

CENTRAL CURRICULUM COMMITTEE

Opened new door, for the beginning of new era under the supervision of Prof Dr. Zia ul Haq, VC Khyber Medical University and Dr. Brekhna Jamil Director IH-PE&R the Central Curriculum & Assessment Committee has been formulated. This is first step taken to change the dynamics of Allied Health Sciences and Nursing Education in Pakistan. Committee by using a craft man approach has developed study guide which will provide pathways for other to follow and KMU will pre-serve the leadership in providing quality education across Pakis9tan and will be a reference point of quality in future. Committe has developed curricula to promote inter-professional learning, enhancing and improving the quality of life for people by discovering, teaching and applying knowledge related to Nursing, rehabilitation Sciences & Allied Health sciences.

High-quality education is relevant to patient needs and the changing patterns of skills that are demanded by modern health care and aligning assessment and providing quality training to students will definitely will be the outcome. Which will strengthen and enhance quality of Health System across Pakistan.

The Central Curriculum & Assessment Committee is as follows:

Dr. Brekhna Jamil	Chairperson	Director Institute of Health Professions Education & Research, KMU
Prof. Dr. Zia Ul Islam	Member	Professor ENT
Dr. Syed Hafeez Ahmad	Member	Addl. Controller of Examination Khyber Medical University
Dr. Danish Ali Khan	Member	Deputy Dean Medical Profession- al Education Department Alliance Healthcare (PVT) LTD
Sardar Ali	Member	Assistant Professor Institute of Nursing Khyber Medical University
Muhammad Asif Zeb	Member	Lecturer Institute of ParaMedical Sciences Khyber Medical University
Nazish A Qadir	Member	Lecturer Institute of Physical Medicine & Rehabilitation Khyber Medical University
Syed Amin Ullah	Member	Assistant Director Academics Khyber Medical University



INTRODUCTION

Allied Health Sciences deal with all kind of diagnostic techniques used in the medical sector and are very crucial for the treatment of the patients. With diagnosis depending on technology, the role of allied health professional has become vital for delivering successful diagnostic and therapeutic. The allied health professionals include Medical laboratory technologists, Dental, Radiology, Anesthesia, Cardiology, Cardiac perfusion, Surgical, renal dialysis and Emergency technologists. Their role is to use scientific principles and evidence-based practice for the diagnosis, evaluation and treatment of various disorder; prevention of diseases, and to promote health of the community. In addition, it also deal with the application of administration and management skills.

OBJECTIVES

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

1. **To prepare a cadre of health technologists and workers who can effectively assist senior health professionals in the delivery of quality health services.**
2. **To prepare paramedical workers for all levels of the health care delivery system from the primary to the tertiary level.**
3. **To introduce and impart standard technical education with new modern techniques, within the fields of medical technologies, by replacing the conventional methods of pre-service training (certificate level).**
4. **To provide paramedical workers a status and recognition in the health care delivery system through improving their capacity along with increasing awareness of their responsibilities, authority and job description.**
5. **To equip paramedical staff with modern skills and latest technical knowledge and bring them at par with other national and international level.**



THIRD SEMESTER SUBJECTS RESPIRATORY THERAPY AND INTENSIVE CARE

S.No	Subjects	Duration
1	RRT-601 RESPIRATORY THERAPY-I 2(1+1)	16 weeks
2	PMS-612 GENERAL PATHOLOGY-I 3(2-1)	16 weeks
3	PMS-613 MEDICAL MICROBIOLOGY-I 3(2-1)	16 weeks
4	PMS-614 PHARMACOLOGY-I 3(2-1)	16 weeks
5	PMS-615 COMMUNICATION SKILLS 2(2-0)	16 weeks
6	MLT-601 HAEMATOLOGY-I 3(2-1)	16 weeks
7	ICT- 601 INTENSIVE CARE MONITORING-I 2(1-1)	16 weeks



3rd Semester

RRT-601 RESPIRATORY THERAPY-I 2(1+1)

Course Description

The course "Respiratory Therapy-I" provides an introduction to Respiratory Therapy pathways, including oxygen delivery, instrument for oxygen delivery, Aerosole & Aerosole drug therapy, humidity technique, Inhaler technique, coughing technique, postural drainage, chest physiotherapy, non-invasive ventilation and palliative care. It will also cover the importance and use of the technique in the home, hospital and clinical setups.

Cognitive Domain

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

1. Describe the oxygen and their usage in home, hospital and clinical set-ups.
2. Discuss the inhaler therapy.
3. Explain the procedure of chest physiotherapy.
4. Describe the non-invasive ventilation.
5. Discuss the palliative care
6. Discuss the clinical role of Aerosole drug therapy

Skills Domain

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

1. Demonstrate selection of oxygen delivery devices for oxygen therapy
2. Demonstrate procedure & parameters of non-invasive ventilation
3. Perform the procedure Aerosole therapy
4. Perform the procedure of chest physiotherapy
5. Perform the application of inhaler
6. Perform the application of humidifier

Affective Domain

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

1. Demonstrate punctuality.
2. Follow the specified norms of the IL, SGD teaching & learning.
3. Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.
4. Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.

TOS -RRT-601 RESPIRATORY THERAPY-I 2(1+1)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: OXYGEN THERAPY										
1	Week-1	Definition	Define the oxygen therapy	C1			Interactive Lecture/SGD	1	MCQ's	5
2		Types	Discuss the types of oxygen therapy	C2						
3		Administration	Choose the administration of oxygen therapy	C3						
4		Purpose	List the purpose of oxygen therapy	C1						
5		Complication	Assess complication of oxygen therapy	C5						
6		Practical		Perform the procedure of oxygen therapy		P4		Demo	2	OPSE
7	Comply to SOPS for observation of SPO2					A	Role Play	Formative Assessment		
TOPIC: HYPERBARIC OXYGEN THERAPY										
8	Week-2	Definition	Define hyperbaric oxygen therapy	C1			Interactive Lecture/SGD	1	MCQ's	5
9		Physiology	Explain physiology of oxygen	C2						
10		Indication	Enlist the indication of hyperbaric oxygen therapy	C1						
11		Contraindication	Enlist the contraindication of hyperbaric oxygen therapy	C1						
12		Complication	Assess complication of hyperbaric oxygen therapy	C2						
13		Practical		Perform the procedure of hyperbaric oxygen therapy		P4		Demo	2	OPSE
14	Comply to SOPS for observation of SPO2					A	Role Play	Formative Assessment		

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: LONG TERM OXYGEN THERAPY										
15	Week-3	Definition	Define long term oxygen therapy	C2			Interactive Lecture/SGD	1	MCQ's	5
16		History	Describe history of long term oxygen therapy	C2						
17		Indication	Enlist indication of long term oxygen therapy	C1						
18		Contraindication	Enlist contraindication of long term oxygen therapy	C1						
19		Advantages	Determine advantages of long term oxygen therapy	C5						
20		Prescribing LTOT	Select the prescription of long term oxygen therapy	C5						
21		Complication	Assess complication of long term oxygen therapy	C5						
22	Practical	Interpretation of reactive oxygen species		P4		Demo	2	OPSE	5	
23		Comply to sops for interpretation of reactive oxygen species			A	Role Play		Formative Assessment		
TOPIC: OXYGEN THERAPY DEVICES										
24	Week-4	Introduction	What is oxygen therapy devices	C1			Interactive Lecture/SGD	1	MCQ's	5
25		Factors for selecting de-vice	Illustrate factors for selecting oxygen therapy device	C2						
26		Advantages	Enlist advantages of oxygen therapy devices	C1						
27		Disadvantages	Enlist disadvantages of oxygen therapy devices	C1						
28		Limitation	Enlist limitation of oxygen therapy devices	C1						
29		Complication	Assess complication of oxygen therapy devices	C5						
30		Practical	Perform the procedure of application of oxygen therapy devices		P4					
31	Comply to sops for application of oxygen therapy devices				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: OXYGEN TOXICITY											
32	Week-5	Introduction	Define oxygen toxicity	C1			Interactive Lecture/SGD	1	MCQ's	5	
33		Factors	Enlist factors affecting oxygen toxicity	C1							
34		Pathophysiology	Illustrate the pathophysiology of oxygen toxicity	C2							
35		Protective mechanism	Explain the Protective Mechanism	C2							
36		Systemic effects	Discuss the systemic effects	C2							
37		Practical				P4		Demo	2	OPSE	5
38						A	Role Play	Formative Assessment			
TOPIC: AEROSOLE THERAPY											
39	Week-6	Definition	Define aerosol therapy	C2			Interactive Lecture/SGD	1	MCQ's	5	
40		Types	Explain the types of aerosol therapy	C2							
41		Devices	Identify various devices used for aerosol therapy	C3							
42		Indication	Enlist the indications for aerosol therapy	C1							
43		Limitation	Evaluate the limitations of aerosol therapy	C4							
44		Practical		Perform the procedure of aerosole therapy independently		P4		Demo	2	OPSE	5
45				Comply to sops for the nebulizer mask effectively			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: AEROSOLE DRUG THERAPY										
46	Week-7	Introduction	Define aerosol drug therapy	C1			Interactive Lecture/SGD	1	MCQ's	5
47		Physiology	Explain physiology of aerosole drug therapy	C2						
48		Types	Explain the types of aerosol drug therapy	C2						
49		Indications	Enlist the indications for aerosol drug therapy	C1						
50		Contraindication	Enlist the contraindication of aerosole drug therapy	C1						
51		Limitation	Evaluate the limitations of aerosoldrugs therapy	C5						
52		Practical	Perform the procedure of aerosole drug therapy independently		P4					
53	Comply to sop's for the aerosole drug therapy effectively				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: HUMIDITY THERAPY										
54	Week-8	Introduction	Define humidity therapy	C1			Interactive Lecture/SGD	1	MCQ's	5
55		Uses	Explain uses of humidity therapy	C2						
56		Types	Explain the types of humidity therapy	C2						
57		Indication	Describe the indications of humidity therapy	C2						
58		Contraindication	Discuss the contraindication of humidity therapy	C2						
59		Advantages	Discuss the advantages of humidity therapy	C2						
60		Practical	Perform the uses of humidifier independently			P4	Demo	2	OPSE	5
61	Comply to sops for the humidity therapy effectively				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: BREATHING EXERCISE										
62	Week-9	Introduction	Define breathing exercise	C1			Interactive Lecture/SGD	1	MCQ's	5
63		Position	Discuss position is suitable for breathing exercise	C2						
64		Physiology	Explain physiology of breathing	C2						
65		Indication	Discuss the indication of breathing exercise	C2						
66		Contraindication	Discuss contraindication of breathing exercise	C2						
67		Advantages	Illustrate advantages of breathing exercise	C2						
68		Practical		Perform breathing exercise independently		P4		Demo		OPSE
69			Comply to sops for the breathing exercise effectively			A	Role Play	2	Formative Assessment	
TOPIC: COUGHING TECHNIQUE										
70	Week-10	Introduction	Define coughing technique	C1			Interactive Lecture/SGD	1	MCQ's	5
71		Physiology	Explain the physiology of cough	C2						
72		Position	Discuss position is suitable for coughing technique	C2						
73		Indication	illustrate the indication of coughing technique	C2						
74		Contraindication	Discuss contraindication of coughing technique	C2						
75		Advantages	Explain the advantages of coughing technique	C2						
76		Practical		Perform coughing technique independently		P4		Demo		OPSE
77			Comply to sops for the coughing technique effectively			A	Role Play	2	Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: CHEST PHYSIOTHERAPY										
78	Week-11	Introduction	Define chest physiotherapy	C1			Interactive Lecture/SGD	1	MCQ's	5
79		Types	Explain the types of chest physiotherapy	C2						
80		Position	Discuss position is suitable for chest physiotherapy	C2						
81		Indication	Explain the indication of chest physiotherapy	C2						
82		Contraindication	Discuss contraindication of chest physiotherapy	C2						
83		Advantages	Discuss advantages of chest physiotherapy	C2						
84		Practical	Perform chest physiotherapy independently		P4		Demo	2	OPSE	5
85	Comply to SOPS for the chest physiotherapy effectively				A	Role Play	Formative Assessment			
TOPIC: POSTURAL DRAINAGE										
86	Week-12	Introduction	Define postural drainage	C2			Interactive Lecture/SGD	1	MCQ's	5
87		Position	Discuss position is suitable for postural drainage	C2						
88		Indication	Explain indication of postural drainage	C2						
89		Contraindication	Discuss contraindication of postural drainage	C2						
90		Instruments	Illustrate instruments are used for postural drainage	C2						
91		Advantages	Explain advantages of postural drainage	C2						
92		Practical	Perform postural drainage independently		P4		Demo	2	OPSE	5
93	Comply to SOPS for postural drainage effectively				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INHALER TECHNIQUES										
94	Week-13	Definition	Define inhaler techniques	C1			Interactive Lecture/SGD	1	MCQ's	5
95		Instruments	Discuss instruments used for inhaler techniques	C2						
96		Indication	Explain indications of inhaler techniques	C2						
97		Contraindication	Illustrate contraindication for inhaler techniques	C2						
98		Advantages	Discuss advantages of inhaler techniques	C2						
99		Practical	Perform inhaler techniques independently			P4	Demo	2	OPSE	5
100	Comply to SOPS for inhaler techniques effectively					A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: NON-INVASIVE MECHANICAL VENTILATION (CPAP)										
101	Week-14	Introduction	Define non-invasive mechanical ventilation (CPAP)	C2			Interactive Lecture/SGD	1	MCQ's	5
102		Indication	Discuss indications of non-invasive mechanical ventilation (CPAP)	C2						
103		Contraindication	Illustrate contraindications of non-invasive mechanical ventilation (CPAP)	C2						
104		Advantages	Explain advantages of non-invasive mechanical ventilation (CPAP)	C2						
105		Disadvantages	Discuss disadvantages of non-invasive mechanical ventilation (CPAP)	C2						
106		Parameters	Explain parameters of non-invasive mechanical ventilation (CPAP)	C2						
107		Practical	Perform non-invasive mechanical ventilation (CPAP) independently		P4					
108	Comply to SOPS for non-invasive mechanical ventilation (CPAP) effectively				A	Role Play	Formative Assessment			
TOPIC: NON-INVASIVE MECHANICAL VENTILATION (BIPAP)										

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
109	Week-15	Introduction	Define non-invasive mechanical ventilation (BIPAP)	C1			Interactive Lecture/SGD	1	MCQ's	5
110		Indication	Discuss indications non-invasive mechanical ventilation (BIPAP)	C2						
111		Contraindication	Explain contraindication of non-invasive mechanical ventilation (BIPAP)	C2						
112		Advantages	Illustrate advantages of non-invasive mechanical ventilation (BIPAP)	C2						
113		Disadvantages	Discuss disadvantages of non-invasive mechanical ventilation (BIPAP)	C2						
114		Modes	Illustrate modes of non-invasive mechanical ventilation (BIPAP)	C2						
115		Parameters	enlist parameters of non-invasive mechanical ventilation (BIPAP)	C2						
116		Practical	Perform non-invasive mechanical ventilation (BIPAP) independently		P4					
117	Comply to SOPS for non-invasive mechanical ventilation (BIPAP)				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: PALLIATIVE CARE										
118	Week-16	Definition	Define palliative care	C2			Interactive Lecture/SGD	1	MCQ's	5
119		Types	Illustrate types of palliative care	C2						
120		Selection criteria	Discuss selection for palliative care	C1						
121		Indication	Explain indications of palliative care	C2						
122		Practical	Locate Antecubital fossa independently			P4		Demo	2	OPSE
123	Comply to SOPS for palliative care					A	Role Play	Formative Assessment		

ICT- 601 INTENSIVE CARE MONITORING-I 2(1-1)

Course Description

This course focuses to introduce students to intensive care units along with the different equipments in ICUs as well as various techniques of monitoring the critically ill patients admitted in ICUs. Patient monitoring includes all the vital signs such as Pulse, Blood Pressure, Respiratory rate, Temperature and blood sugar. It will introduce students to the basics of ECG, Capnography, Blood Gases and assessment of the Nervous system. Learning this course may capable the students in monitoring any deviations in the overall health of Critically ill patients admitted in various ICUs.

Cognitive Domain

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

1. Describe the normal and abnormal Pulse & Blood pressure of patients.
2. Discriminate Temperature of patients from various site.
3. Describe the basic principles of critical care monitoring in ICU.
4. Formulate the benefits and risks of ICU monitoring techniques.
5. Describe the oxygenation & Blood gasses of the patients

Skills Domain

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

1. Demonstrate selection of oxygen delivery devices for oxygen therapy.
2. Demonstrate the normal and abnormal Pulse & Blood pressure of patients.
3. Perform Temperature taking of patients from various site.
4. Demonstrate the basic principles of critical care monitoring in ICU.
5. Demonstrate the benefits and risks of ICU monitoring techniques.
6. Perform monitoring ICP and Intra abdominal Pressures.
7. Demonstrate the oxygenation & Blood gasses of the patients.

Affective Domain

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

1. Demonstrate punctuality.
2. Follow the specified norms of the IL, SGD teaching & learning.
3. Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.
4. Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.

TOS -ICT- 601 INTENSIVE CARE MONITORING-I 2(1-1)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: ORIENTATION OF CRITICAL CARE										
1	Week-1	Physical design of intensive care setting	Describe the Physical design of Intensive care setting	C2			Interactive Lecture/SGD	1	MCQ's	5
2		Understanding critical care patients	Explain the critical care patients	C2						
3		Hazards and safety precautions	Illustrate the Hazards and safety precautions in ICU	C2						
4		Job description of critical care technologist	Discuss the Job description of critical care technologist	C2						
5		Practical	Demonstration of ICU monitoring equipment			P4	Demo	2	OPSE	5
6			Comply to SOPs for Demonstration of ICU monitoring equipment			A	Role Play		Formative Assessment	
TOPIC: VITAL SIGNS MONITORING										
7	Week-2	Heart Rate	select the normal range and proper terms for Heart Rate	C1			Interactive Lecture/SGD	1	MCQ's	5
8		Blood Pressure	select the normal range and proper terms for Blood Pressure	C1						
9		Respiratory Rate	select the normal range and proper terms for Respiratory Rate	C1						
10		Temperature	select the normal range and proper terms for Temperature	C1						
11		Blood Glucose	select the normal range and proper terms for Blood Glucose	C1						
12		Oxygen Sat.	select the normal range and proper terms for Oxygen Saturation	C1						
13		Practical	Demonstration of Pulse & Respiratory Rate measurement			P4	Demo	2	OPSE	5
14			Comply to SOPs for Demonstration of Pulse & Respiratory Rate measurement			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: TEMPERATURE										
15	Week-3	Introduction	Define Temperature and related Terminologies	C1			Interactive Lecture/SGD	1	MCQ's	5
16		core body Temperature	Define Core Body Temperature	C1						
17		scales of temperature	Explain the various Scales for Temperature measurement	C2						
18		Temperature regulation	Explain the various adaptations in the body against Temperature changes	C2						
19		different site	Identify the different site for taking body temperature	C1						
20		Thermometer	Explain the variouse types of thermometer	C2						
21		Definition of Hypothermia	Define Hypothermia in Refrence to Normal range of Temperature	C1						
22		Causes of Hypothermia	Classify the various Causes of Hypothermia	C2						
23		Grading Hypothermia	Classify the Gradings of Hypothermia	C2						
24		Management of Hypothermia	Evaluate the management Plan for Hypothermia	C5						
25	Practical	Taking body temperature from various sites via different thermometers		P4		Demo	2	OPSE	5	
26		Comply to SOPs for taking body temperature from various sites via different thermometers			A	Role Play		Formative Assessment		
TOPIC: HYPERTHERMIA										
27	Week-4	definition	Define Hyperthermia	C1			Interactive Lecture/SGD	1	MCQ's	5
28		infectious Causes	Enlist the Infectious Causes of Hyperthermia	C2						
29		Non-infectious causes	Summarize the Non-Infectious Causes of Hyperthermia	C2						
30		Management	Prioritize the management of Hyperthermia by use of antipyretics, External Cooling and Internal Cooling	C5						
31		Complications	Categorize the complications of Hyperthermia	C4						
32		Practical	Perform the Technique of Cold Sponging independently		P4					
33	Comply to sops for the Technique of Cold Sponging independently				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items				
				C	P	A								
TOPIC: AIRWAY MONITORING														
34	Week-5	Introduction	Explain the normal Airway Anatomy	C2			Interactive Lecture/SGD	1	MCQ's	5				
35		Airway Assesment Mneumonics	Explain assesment for airway by use of Look, Listen & Feel methode	C2										
36		Airway Management Maneover	Apply Head Tilt, chin Left or Jaw Thrust maneover for airway patency	C2										
37		Patient's Airway Monitoring under specific Conditions	Identify the airway loss risks in Non-Intubated patients, Intubated and Post Extubation patients while Monitoring	C1										
38		Introduction to placement of Artificial Airway	Explain the Indications for placement of Oropharyngeal, Nasopharyngeal and Endotracheal Tubes	C2										
39		Confirmation of placement of ETT	Evaluate the various confirmation markers of Endotracheal Tube placement	C5										
40		Securing ETT	Explain the various knot techniques for Securing ETT	C2										
41		Adjusting Cuff Pressure in airway	choose the proper ETT Cuff Pressure to Secure Airway	C2										
42	Practical	Perform the placement of Guddle and Nasopharyngeal Airways and measure ETT Cuff Pressure independently		P4		Demo	2	OPSE	5					
43		Comply to sops for the placement of Guddle and Nasopharyngeal Airways and measurement of Cuff Pressure independently			A	Role Play		Formative Assessment						
TOPIC: ARTERIAL BLOOD GASES														
44	Week-6	introduction	Define Arterial Blood Gases and Recall body Buffer Systems	C1			Interactive Lecture/SGD	1	MCQ's	5				
45		different terms	Interpret the terminology in pH/ABGs	C2										
46		ROME Mnemonics	Apply ROME mnemonics for directional changes in pH/ABGs	C3										
47		Respiratory component	Explain the Respiratory Component in ABGs and its response to pH	C2										
48		Metabolic component	Explain the Metabolic Component in ABGs and its response to pH	C2										
49		Practical	Perform Blood sample taking for ABGs		P4						Demo	2	OPSE	5
50			Comply to SOPs for taking blood sample for ABGs from Various sites Independently			A					Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: CAPNOGRAPHY										
51	Week-7	definition	Define capnography and Capnometry	C1			Interactive Lecture/SGD	1	MCQ's	5
52		Indications	Summarize the indications for Capnography	C2						
53		capnometry	Explain Capnometry	C2						
54		types of capnometry	Explain the types of Capnometry	C2						
55		Advantages and Disadvantages of Main stream Capnometry	Summarise the Advantages and Disadvantages of Main stream Capnometry	C2						
56		Advantages and Disadvantages of Side stream Capnometry	Summarize the Advantages and Disadvantages of Side stream Capnometry	C2						
57		Capnogram definition	Define Capnogram	C1						
58		Various phases of Capnogram	interpret the Various phases of Capnogram	C2						
59		Practical	Perform the procedure of Capnography and interpret phases of Capnogram independently		P4					
60	Comply to SOPs for Performing the procedure of Capnography and interpreting phases of Capnogram independently				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: PULMONARY FUNCTION TEST										
61	Week-8	introduction	Explain about Pulmonary Function Test	C1			Interactive Lecture/SGD	1	MCQ's	5
62		Indications	Summarize the indications for PFT	C2						
63		Lung Volumes and Capacity	Identify the Normal Lungs Volumes and Capacity	C1						
64		Flow-Volume Loop	Analyze the Flow-Volume Loop	C4						
65		Practical	Diagnosis of Normal and Abnormals parameters in PFT independently		P4		Demo	2	OPSE	5
66			Comply to SOPs for performing PFTs using spirometer/PFT machine			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: PULSE & PULSE OXIMETRY										
67	Week-9	Definition	Define Pulse and Pulse Oximetry	C1			Interactive Lecture/SGD	1	MCQ's	5
68		Sites	List the variouse sites for Checking Periphral Pulse	C1						
69		Factors affecting Pulse	List the various factors affecting Pulse i.e. age, emotions, activity and Disease etc	C1						
70		Tachycardia	Summarize the Causes and Sign & Symptoms of Tachycardia	C2						
71		Bradycardia	Summarize the Causes and Sign & Symptoms of Bradycardia	C2						
72		Charactteristics	Summarize the characteristics of Pulse	C2						
73		Purpose	Explain the Purpose of Pulse oximetry	C2						
74		Normal Pulse Wave	Identify the different parts of Normal Pulse Wave	C1						
75		Abnormal Pulse Wave Form	Evaluate the Wave form of Hypo & Hyperkinetic Pulse, collapsing Pulse, Pulse Bisferiens, Alternans, Bigeminus and Paradoxus	C5						
76	Practical	Perform the taking of Periphral Pulse from Various sites and Pulse Oximetry by pulse oximeter and Cardiac Monitor		P4		Demo	2	OPSE	5	
77		Comply to SOPs for the taking of Periphral Pulse from Various sites and Pulse Oximetry by pulse oximeter and Cardiac Monitor			A	Role Play		Formative Assessment		
TOPIC: ECG										
78	Week-10	Definition	Define Electrocardiogram, Electrocardiograph and Electrocardiography	C1			Interactive Lecture/SGD	1	MCQ's	5
79		Electrophysiology of the heart	Explain the Basics Electrophysiology of the Heart	C2						
80		ECG Patterns	Explain how the ECG patterns are made	C2						
81		Practical	Perform ECG Leads Placementa and taking 12 Leads ECG independently		P4		Demo	2	OPSE	5
82			Calculation of Heart for Regular Rhythm Independently			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
83	Week-11	Waves of ECG	Identify the different Waves of ECG	C1			Interactive Lecture/SGD	1	MCQ's	5
84		Intervals in ECG	Analyze the various Intervals in ECG	C4						
85		Timing and Durations on ECG Paper	Analyze the Timming and Durations on ECG Paper	C4						
86		Practical	Calculation of Heart for Regular Rhythm Independently		P4		Demo	2	OPSE	
87	Calculation of Heart for Regular Rhythm Independently				A	Role Play	Formative Assessment			
88	Week-12	ECG Leads and their Pattern	Evaluate the Unipolar and Bipolar Leads of ECG	C5			Interactive Lecture/SGD	1	MCQ's	5
89		Heart Rate Calculation from ECG for Regular Rhythm	Estimate the Heart Rate Calculation from ECG for Regular Rhythm	C5						
90		Heart Rate Calculation from ECG for Irregular Rhythm	Estimate the Heart Rate Calculation from ECG for Irregular Rhythm	C5						
91		Practical	Calculation of Heart for Irregular Rhythm Independently		P4		Demo	2	OPSE	
92	Calculation of Heart for Regular Rhythm Independently				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: NON- INVASIVE BLOOD PRESSURE (NIBP)										
93	Week-13	Definition	Define Blood pressure, Hypotension and Hypertension and its normal range	C1			Interactive Lecture/SGD	1	MCQ's	5
94		Systolic and Diastolic BP	Explain Systolic and Diastolic Blood Pressure	C2						
95		Mean Arterial and Mean Systemic Pressures	Explain Mean Arterial Pressure and Mean Systemic Pressure	C2						
96		Neurological Regulation of Blood Pressure	Explain the Baroreceptors and Chemoreceptors mechanism in regulation of Blood Pressure	C2						
97		Renin-Angiotensin Aldosteron system for Regulation of BP	Explain the Renin-Angiotensin Aldosteron system for Regulation of Blood Pressure	C2						
98		Practical	Perform the taking of Blood Pressure via different types of Spaghmanometer independently		P4		Demo	2	OPSE	5
99			Comply to SOPs for Performing the taking of Blood Pressure via different types of Spaghmanometer independently			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INVASIVE BLOOD PRESSURE										
100	Week-14	Introduction	Explain Invasive Blood Pressure	C2			Interactive Lecture/SGD	1	MCQ's	5
101		Common sites for Arterial Line Insertion	Enlist the Common sites for Arterial Line Insertion	C2						
102		Allen's Test	Demonstrate the Allen's Test	C2						
103		Advantages of Invasive BP Monitoring	Summarize the Advantages of Invasive BP Monitoring							
104		Disadvantages of Invasive BP Monitoring	Summarize the Disadvantages of Invasive BP Monitoring	C2						
105		Components and Principles of Invasive BP Monitoring	Identify the Components and Principles of Invasive BP Monitoring	C2						
106		Zeroing and Leveling of Transducer	Construct the stepwise approach for the Leveling and Zeroing of Transducer	C2						
107		Practical	Perform the procedure of taking Invasive BP in ICU independently		P4					
108	Comply to SOPs Perform the procedure of taking Invasive BP in ICU independently				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: NEUROLOGICAL HISTORY AND EXAMINATION & GLASGOW COMA SCALE											
109	Week-15	Basics of History taking in Neurological Diseases	Explain the Basics of History taking in Neurological Diseases	C2			Interactive Lecture/SGD	1	MCQ's	5	
110		Physical Examination for Neurological Diseases	Explain the Physical Examination for Neurological Diseases	C2							
111		Introduction	Explain Glasgow Comma Scale	C2							
112		scoring for Each Component	Interprete the Scoring of each condition in Eye, Verbal & Motor Activity component of GCS	C2							
113		Practical		Perform the calculation of GCS independently		P4		Demo			OPSE
114				Comply to SOPs the calculation of GCS independently			A	Role Play	2		Formative Assessment

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: ICP MONITORING, INTRA-ABDOMINAL PRESSURE MONITORING & RENAL FUNCTION MONITORING										
115	Week-16	Definition	Define Intra Cranial Pressure	C2			Interactive Lecture/SGD	1	MCQ's	5
116		Cerebral blood flow and Perfusion Pressure	Explain Cerebral Blood flow and Perfusion pressure	C2						
117		ICP Wave Form	Interprete the wave form of ICP	C2						
118		Causes of Raised ICP	Enlist the Causes of raised ICP	C2						
119		ICP Monitoring Methodes	Enlist the Invasive and Non-Invasive methodes of ICP Monitoring	C2						
120		Introduction	Explain the basics of Intra-Abdominal Pressure	C2						
121		indications	Enlist the Indications of Intra Abdominal Pressure Monitoring	C2						
122		How to Monitor	Demonstrate how to Monitor Intra Abdominal Pressure	C2						
123		Introduction	Explain Importance of Kidney Function in Critically ill patient	C2						
124		Clinical Monitoring	Demonstarte the clinical Monitring of Renal function from Urine Output	C2						
125		Laboratory Monitoring	interprete the renal function from creatinine	C2						
126		Practical	Perform the procedure of Urinary Cathetorization independently		P4					
127	Comply to SOPs for Performing the procedure of Urinary Cathetorization independently				A	Role Play	Formative Assessment			

PMS-612 GENERAL PATHOLOGY-I 3(2-1)

Course Description

Students are being able to understand the basic concepts of pathology and their mechanisms. They should be able to understand cell injury and adaptation, inflammation, repair, healing, and regeneration. They should be able to understand hemodynamic disorders, shock, tumor development and types. Students are also introduced with practical and demonstrative work to acquire skills in the field of pathology

Cognitive Domain

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

1. Understand basic concepts of pathology and their mechanisms
2. Understand cell injury and adaptation, inflammation, repair, healing, and regeneration.
3. Understand hemodynamic disorders and their mechanisms
4. Understand shock and compensatory mechanism of shock
5. Understand oncology, tumor development, types and mechanisms

Skills Domain

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

1. Demonstrate basics concepts of pathology on charts and models
2. Demonstrates cell injury, cellular adaptation, inflammation repair, healing and regeneration, hemodynamic disorders, shock, oncology on video demonstrations.
3. Acquire skills in estimating clotting time, bleeding time, PT and APTT.
4. Identify different slides related to pathology on microscope.

Affective Domain

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

1. Follow the specified norms of the IL, SGD teaching & learning.
2. Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.
3. Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.
4. Comply SOPs to discuss pathology on charts and videos demonstrations
5. Adopt how to care and handle charts and models related to pathology
6. Comply to SOPs for slides representation related to pathology and how to care instruments and equipment's used in slides representation
7. Comply to SOPs estimating clotting time, bleeding time, PT and APTT and how to care instruments and equipment used in it.

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S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: CELLULAR ADAPTATION										
1	Week-1	Introduction	Define Pathology and cellular adapation	C1			Interactive Lecture/SGD	2	MCQ's	5
2		Terminology	Discuss different terminology related to pathology	C2						
3		Types	Enlist the different types of cellular adaptation	C1						
4		Causes	Illustrate the causes of different cellular adaptation	C2						
5		Practical	Identify the defferent causes of cellular adaptation on chart and video demonstration		P4		Demo	2	OPSE	5
6			Adopt how to care and handle charts of causes cellular adaptation			A	Role Play			
7	Week-2	Pathophysiology	Discuss the pathophysiology of different cellular adapation	C2			Interactive Lecture/SGD	2	MCQ's	5
8		Physiological and Pathological example	Describe the cellular adaptaton with different ex-ample	C2						
9		Practical	Identify the defferent types of cellular adaptation on chart and video demonstration		P4		Demo	2	OPSE	5
10			Adopt how to care and handle charts of cellular adaptation			A	Role Play			
TOPIC: CELLULAR INJURY										
11	Week-3	Introduction	Define Cellular injury	C1			Interactive Lecture/SGD	2	MCQ's	5
12		Types	Discuss different types of cellular injury	C2						
13		Causes	Enlist the causes of cellular injury	C1						
14		Morphology	Describe the morphology of cellular injury	C2						
15		Pathophysiology	Discuss the pahtophysiology of cellular injury	C2						
16		Practical	Examination the cellular injury mechanism on charts and video demonstration identification of different mechanism of cellular injury		P4		Demo	2	OPSE	5
17			Comply to SOPs to identify and to show different processes of cellular injury			A	Role Play			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: NECROSIS										
18	Week-4	Introduction	Define necrosis	C1			Interactive Lecture/SGD	2	MCQ's	5
19		Causes	Enlist the causes of necrosis	C2						
20		Types	Describe the different types of necrosis	C2						
21		Morphology	Discuss the morphology of necrosis	C2						
22		Example	Describe the different types of necrosis with exam-ple	C2						
23		Clinical features	Describe clinical features of necrosis	C2						
24		Practical	Differentiate types of necrosis on charts and vedio demon-stration		P4		Demo	2	OPSE	5
25	Comply SOPs to observe pattern of necrosis and adopt how to care and handle charts of necrosis				A	Role Play	Formative Asses-ment			
TOPIC: APOPTOSIS										
26	Week-5	Introduction	Define Apoptosis	C1			Interactive Lecture/SGD	2	MCQ's	5
27		Example	Enlist different example of apoptosis	C1						
28		Morphology	Discuss the morphology of apoptosis	C2						
29		Pathophysiology	Describe the pathogenesis of apoptosis	C2						
30		Practical	Demonstrate the mechanism of apoptosis thourgh video demonstration and charts		P4		Demo	2	OPSE	5
31			Recognize the mechanism of apoptosis and adopt how to care and handle charts of apoptosis			A	Role Play		Formative Asses-ment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: ACUTE INFLAMMATION											
32	Week-6	Introduction	Define Acute inflammation	C1			Interactive Lecture/SGD	2	MCQ's	5	
33		history back-ground and sign symptom	Discuss the history background of inflammation and cardinal sign of inflammation	C2							
34		Characteristics	Explain the characteristics of acute inflammation	C2							
35		Pathophysiology	illustrate vacsular and cellular changes in acute inflammation.	C2							
36		Practical		Demonstrate the vascular and cellular changes on charts and video		P4		Demo	2	OPSE	5
37				Comply SOPs to examine the sign of inflammation in affective way			A	Role Play		Formative Assessment	
TOPIC: PHAGOCYTOSIS AND CHEMICAL MEDIATORS											
38	Week-7	Introduction	Define Phagocytosis and chemical mediators	C1			Interactive Lecture/SGD	2	MCQ's	5	
39		Types	Describe different types of chemical mediators	C2							
40		Function	Describe the function of different chemical mediators	C2							
41		Pathophysiology	Describe the pathogenesis of phagocytosis	C2							
42		Practical		Demonstrate the phagocytosis processes through video charts		P4		Demo	2	OPSE	5
43				Comply SOPs to draw a chart of different types of phagocytosis and chemical mediators independent-ly			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: CHRONIC INFLAMMATION											
44	Week-8	Introduction	Define Chronic inflammation and granulomatous inflammation	C1			Interactive Lecture/SGD	2	MCQ's	5	
45		Causes	Discuss the causes of chronic and granulomatous inflammation	C2							
46		Morphology	Discuss the morphology of chronic inflammation	C2							
47		Pathophysiology	Describe the pathogenesis of chronic inflammation	C2							
48		Practical		Identify the difference between granulomatous inflammation and chronic through charts		P4		Demo	2	OPSE	5
49				Comply SOPs to ensure the safe utilization of charts			A	Role Play		Formative Assessment	
TOPIC: REPAIR AND REGENERATION PROCESSES											
44	Week-9	Introduction	Define repair and regeneration processes	C1			Interactive Lecture/SGD	2	MCQ's	5	
45		Steps of repair processes	Discuss the repair processes of wound healing	C2							
46		Complication	Enlist the different complication of wound healing	C1							
47		Risk factors	Describe the factors which effects wound healing	C2							
48		Practical		Identification of repair mechanism through video demonstration		P4		Demo	2	OPSE	5
49				Recognize how to take care of wound in affective way			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: EDEMA										
50	Week-10	Introduction	Define Edema	C1			Interactive Lecture/SGD	2	MCQ's	5
51		Types	Classify different types of edema	C2						
52		Pathophysiology	Discuss pathophysiology of edema	C2						
53		Clinical features	Describe clinical features of edema	C2						
54		hyperemia and cogestion	Describe the hyperemia and congestion	C2						
55		Practical	Identification of edema mechanism through charts/video demonstration			P4	Demo	2	OPSE	5
56	Comply to SOPs to ensure the safe utilization of charts indepently				A	Role Play	Formative Assessment			
TOPIC: HEMORRHAGE AND THROMBOSIS										
57	Week-11	Introduction	Define Hemorrhage and thrombosis	C1			Interactive Lecture/SGD	2	MCQ's	5
58		Etiology	Enlist the causes of hemorrhage and thrombosis	C2						
59		Types	Discuss the types of thrombosis	C2						
60		Pathogenesis	Illustrate the pathogenesis of thrombosis	C2						
61		Practical	Estimation of Prothrombin Time			P4	Demo	2	OPSE	5
62			Estimation of Clotting Time			P4				
63	Estimation of Bleeding Time				P4					
64	Estimation of Activated Partial Thromboplastin Time				P4					
65	Adopt how to care and handle instruments and equipments used in the above tests				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: EMBOLISM AND INFARCTION										
66	Week-12	Introduction	Define embolism and infarction	C1			Interactive Lecture/SGD	2	MCQ's	5
67		clinical features	Enlist the clinical feature of embolism and infarc-tion	C1						
68		types	Discuss the types of infarction and embolism	C2						
69		Pathogenesis	Discuss the pathophysiology of embolism and in-farction	C2						
70		Practical	Identification of embolism and infarction mecha-nism thourgh video/charts			P4	Demo	2	OPSE	
71			Comply to SOPs to ensure the safe utilization of chars independly			A	Role Play		Formative Assess-ment	
TOPIC: SHOCK										
72	Week-13	Introduction	Define shock	C1			Interactive Lecture/SGD	2	MCQ's	5
73		Causes	Enlist the causes of shock	C1						
74		Types	Explaine the types of shock	C2						
75		Clinical features	Enlist the clinical feature of shock	C1						
76		Pathogenesis	Disuss the pathogenesis of shock	C2						
77		Practical	Identification of different types of shock and mech-anism through charts/video demonstration			P4	Demo	2	OPSE	
78			Comply to SOPs to differentiate types of shock			A	Role Play		Formative Assess-ment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: HYPEREMIA, CONGSION AND NEOPLASIA										
79	Week-14	Definition	Define Neoplasia, hyperemia and congestion	C1			Interactive Lecture/SGD	2	MCQ's	5
80		Components	Explain the components of neoplasia	C2						
81		Etiology	Enlist the etiological factors of hyperemia and con-gestion	C1						
82		Types	Discuss the types of hyperemia and congestion	C2						
83		Practical	Identification of hypermia, congestion and neo-plasia through slides			P4	Demo	2	OPSE	5
84	Comply to SOPs the safe utilization of lab equip-ments				A	Role Play	Formative Assessment			
TOPIC: BENIGN TUMOR										
85	Week-15	introduction	Define Benign tumor	C1			Interactive Lecture/SGD	2	MCQ's	5
86		Nomenclature	Explain the nomenclature of benign tumor	C2						
87		Characteristics	Discuss the characteristics of benign tumor	C2						
88		Mechanism	illustrate the mechanism of benign tumor	C2						
89		Practical	Identification of benign tumor via slides			P4	Demo	2	OPSE	5
90			Comply to SOPs the safe utilization of lab equip-ments			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: MALIGNANT TUMOR AND METASTASIS										
91	Week-16	Definition	Define Malignant tumor and metastasis	C1			Interactive Lecture/SGD	2	MCQ's	5
92		Nomenclature	Explain the nomenclature of malignant tumor	C2						
93		Characteristics	Discuss the characteristics of malignant tumor	C2						
94		Pathway	Discuss the metastasis through different pathways	C2						
95		Mechanism	Illustrate the mechanism of malignant tumor	C2						
96		Practical	Identification of malignant tumor mechanism through chart and video demonstration			P4		Demo	2	OPSE
97	Comply to SOPs for recognizing pattern of malignant tumor and adopt how to care and handle charts of malignant tumor					A	Role Play		Formative Assessment	

PMS-613 MEDICAL MICROBIOLOGY-I 3(2-1)

Course Description

The purpose of this course is to equip the students by imparting knowledge and understanding of the bacteria and fungi, to foster the development of professional skills through this curriculum by understanding the transmission, pathogenesis and diagnosis of bacteria and fungi and see how this knowledge comes into play in real-world scenarios and in clinical settings. For this curriculum is designed in such a way to get insight of basics and explanations of different bacterial and fungal infection.

Cognitive Domain

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

1. **Discuss the history and scope of Medical Microbiology**
2. **Describe the structure and function of prokaryotic cell**
3. **Discuss the basic concepts in bacteriology and mycology**
4. **Identify different bacteria's with their importance in medical science**
5. **Discuss the nature of pathogenic bacteria and fungi**
6. **Describe the transmission, pathogenesis, clinical finding and laboratory diagnosis of bacteria and fungi.**

Skills Domain

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

1. **Demonstrate ability to Identify and label different instruments in microbiology lab**
2. **Demonstrate the lab safety practices**
3. **Perform sterilization and different specimen culturing**
4. **Demonstrate gram staining and acid fast staining**
5. **Study of Microscope and use the microscope to look slides effectively.**
6. **Perform biochemical testing, MHA preparation and AST.**

Affective Domain

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

1. **Follow the specified norms of the IL, SGD teaching & learning.**
2. **Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.**
3. **Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.**

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S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION AND HISTORICAL REVIEW OF MICROBIOLOGY										
1	Week-1	History	Explain the history of microbiology	C2			Interactive Lecture/SGD	2	MCQ's	5
2		Scope	Discuss scope of medical microbiology	C2						
3		Definition	Define Prokaryotic Cell	C1						
4		Prokaryotic cell	Explain structure of Prokaryotic Cell	C2						
5		Practical	Explain laboratory safety practices and use of PPE		P2		Demo	2	OPSE	5
6	Comply SOPs of laboratory safety practices and adopt how to care and handle laboratory equipment's.				A	Role Play	Formative Assessment			
7	Week-2	Gram positive and Gram negative	Discuss Gram positive and gram negative cell	C2			Interactive Lecture/SGD	2	MCQ's	5
8		Size, shape and types of bacteria	Describe size, shape and types of prokaryotic cell	C2						
9		Differentiation	Differentiate the difference prokaryotic and eukaryotic cell	C4						
10		Practical	Demonstrate microscopes; slides; test tubes; petri dishes; growth mediums, inoculation loops; pipettes and tips; incubators; autoclaves		P1		Demo	2	OPSE	5
11			Comply SOPs of laboratory safety practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
TOPIC: NORMAL FLORA AND MEDICAL IMPORTANT BACTERIA										
12	Week-3	Normal flora	Describe normal microbial flora of human flo-ra	C2			Interactive Lecture/SGD	2	MCQ's	5
13		Bacterial Classification	Classify medically Important Bacteria	C2						
14		Bacterial Diseases	Enlist the diseases caused by medically important bacteria's	C2						
15		Practical	Perform sterilization of different equipment's and culture media use in Microbiology lab		P4		Demo	2	OPSE	5
16			Adopt the care, use and SOPs of sterilization			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: HOST DEFENCES AND BACTERIAL PATHOGENESIS										
17	Week-4	Definition	Define Pathogenesis	C1			Interactive Lecture/SGD	2	MCQ's	5
18		Pathogenesis	Explain the mechanism of bacterial pathogen-esis	C2						
19		Definition	Define Immunity	C1						
20		Immunity	Discuss Innate immunity and adaptive im-munity	C2						
21		Host defense failure	Illustrate host defense failure	C3						
22		Practical	Explain appropriate specimen for different bacterial infec-tion		P2		Demo	2	OPSE	5
23	select the specimen for bacterial infection				A	Role Play	Formative Assessment			
TOPIC:LABORATORY DIAGNOSIS										
24	Week-5	Bacteriologic approach for diagnosis	Explain the bacteriologic approach for bacterial diagnosis	C2			Interactive Lecture/SGD	2	MCQ's	5
25		Bacterial Specimen	Enlist the specimen for infection caused by different bacteria's	C1						
26		Immunologic approach for diagnosis	Explain the immunologic approach for bacterial diagnosis	C2						
27		Practical	Perform appropriate preservative for preservation and transportation		P2		Demo	2	OPSE	5
28			Adopt to preserve and transport the specimens			A	Role Play			
TOPIC: GRAM POSITIVE COCCI										
29	Week-6	Definition	Define Staphylococci and streptococci	C1			Interactive Lecture/SGD	2	MCQ's	5
30		Staphylococci and Streptococci	Explain medically important species of staphy-lococci and streptococci with important prop-erties	C2						
31		Practical	Perfrom culture media preparation		P1		Demo	2	OPSE	5
32			Adopt the how to prepare culture media and inoculate the specimeny			A	Role Play			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
33	Week-7	Clinical Findings	Analyze the clinical findings of different species of staphylococci and streptococci	C4			Interactive Lecture/SGD	2	MCQ's	5
34		Laboratory tests and Medicines	Enlist the lab tests for staphylococci and strep-tococci	C1						
35		Practical	Perform inoculation and isolation of bacterial culture		P2		Demo	2	OPSE	
36			Adopt the how to prepare culture media and inoculate the specimen			A	Role Play		Formative Assessment	
TOPIC: GRAM NEGATIVE COCCI										
37	Week-8	Gram Negative Cocci	Illustrate medically important species of Neis-seria with important properties	C2			Team Base Learning	2	MCQ's	5
38		Clinical Findings	Analyze the clinical findings N. meningitides and N. gonorrhoea	C4						
39		Laboratory tests and Medicines	Enlist the lab tests for staphylococci	C1						
40		Practical	Show different bacterial morphologies on culture media		P2		Demo	2	OPSE	
41			Comply to bacterial identification affectively			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: GRAM POSITIVE RODS											
42	Week-9	Classification	Classify medically important gram positive rods with the list of diseases caused by them	C3			Interactive Lecture/SGD	2	MCQ's	5	
43		Bacillus and Clostridium	Illustrate medically important species of Bacillus, Clostridium and Corynebacterium with important properties	C3							
44		Clinical Findings	Analyze the clinical findings of Bacillus, Clostridium and Corynebacterium species	C4							
45		Laboratory tests and Medicines	Enlist the lab tests recommended for Gram positive rods	C1							
46		Practical		Perform Gram staining		P3		Demo	2		OPSE
47			Comply to SOPs of gram staining affectively			A	Role Play	2	Formative Assessment		
TOPIC: GRAM NEGATIVE RODS											
48	Week-10	Classification	Classify medically important gram negative rods with the list of diseases caused by them	C3			Interactive Lecture/SGD	2	MCQ's	5	
49		Gram Negative bacterias	Illustrate medically important species of gram negative rods with important properties	C3							
50		Practical		Identify microscopy of gram stain smear		P2x		Demo	2		OPSE
51				Comply to SOPs of practical affectively.			A	Role Play	2		Formative Assessment
52	Week-11	Clinical Findings	Analyze clinical findings of different gram negative rods	C4			Interactive Lecture/SGD	2	MCQ's	5	
53		Laboratory tests and Medication	Enlist the lab tests for gram negative rods	C1							
54		Practical		Explain biochemical tests for different bacteria's cultured on culture media		P4		Demo	2		OPSE
55				Comply to SOPs of practical affectively			A	Role Play	2		Formative Assessment

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: ACID FAST BACTERIA										
56	Week-12	Definition	Define acid fast bacteria	C1			Interactive Lecture/SGD	2	MCQ's	5
57		Classification	Classify acid fast bacteria with prominent diseases caused by them	C2						
58		Mycobacterium tuberculosis	Explain important properties of Mycobacterium tuberculosis	C2						
59		Clinical Findings of M. tuberculosis	Analyze clinical findings of Mycobacterium tuberculosis	C4						
60		Lab tests and antibiotics	Enlist the lab tests for Mycobacterium tuberculosis	C1						
61		Practical	State acid fast staining for Mycobacterium Tuberculosis		P2		Demo	2	OPSE	5
62	Comply to SOPs of practical affectively				A	Role Play	Formative Assessment			
TOPIC: SHOCK										

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
63	Week-13	Definition	Define obligate intracellular bacteria	C1			Interactive Lecture/SGD	2	MCQ's	5
64		Intracellular bacteria	Recognize obligate intracellular bacteria with their important properties	C1						
65		Chlamydia and Rickettsia	Analyze the clinical findings of Chlamydia and Rickettsia	C4						
66		Diagnosis and treatment	Enlist the diagnostic approaches for obligate intracellular bacteria	C1						
67		Definition	Define Spirochetes and wall less bacteria	C1						
68		Spirochetes	Enlist medically important spirochetes	C1						
69		Clinical findings of spirochetes	Analyze the clinical findings of Spirochetes	C4						
70		Mycoplasma	Explain the disease caused by mycoplasma	C2						
71		Diagnosis	Enlist the lab tests for spirochetes and Myco-plasma	C1						
72		Practical	Explain the preparation of Muller Hinton agar		P2					
73	Comply to MHA preparation affectively				A	Role Play	Formative Assessment			
TOPIC: INTRODUCTION TO MYCOLOGY										
74	Week-14	Definition	Define mycology	C1			Interactive Lecture/SGD	2	MCQ's	5
75		Classification	Classification of fungi	C3						
76		Fungal structure	Describe structure and growth of fungi	C2						
77		Pathogenesis	Discuss the pathogenesis of fungal infection	C2						
78		Diagnostic procedure	Explain different diagnostic procedure used for the diagnosis of fungal infection	C2						
79		Practical	Perform antibiotic susceptibility testing on MHA for bacterial isolates		P2					
80	Comply to AST affectively				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: CUTANEOUS, SUBCUTANEOUS AND OPPORTUNISTIC MYCOSIS										
81	Week-15	Definition	Define Cutaneous and subcutaneous mycosis	C1			Interactive Lecture/SGD	2	MCQ's	5
82		Cutaneous and Subcutaneous fungi	Enlist the fungi that cause Cutaneous and sub Cutaneous mycosis	C3						
83		Clinical Manifestation	Analyze the clinical manifestation of these fungi	C4						
84		Diagnostic tests and Treatment	Enlist the diagnostic tests for Cutaneous and subcutaneous mycosis	C3						
85		Definition	Define opportunistic mycosis	C1						
86		Opportunistic Mycosis	Enlist the fungi that causes opportunistic my-cosis	C3						
87		Clinical Manifestation	Analyze the clinical manifestation of these fungi	C4						
88		Diagnostic tests and Treatment	Enlist the diagnostic tests for opportunistic mycosis	C1						
89		Practical	Perform KOH preparation for fungal infection specimens		P2					
90	Comply to practical affectively				A	Role Play	Formative Assessment			
TOPIC: SYSTEMIC MYCOSIS										
91	Week-16	Definition	Define Systemic Mycosis	C1			Interactive Lecture/SGD	2	MCQ's	5
92		Systemic Mycosis	Enlist the fungi that causes systemic mycosis	C3						
93		Clinical Manifestation	Analyze the clinical manifestation of these fungi	C4						
94		Diagnostic tests and Treatment	Enlist the diagnostic tests systemic mycosis	C1						
95		Practical	Explain the interpretation of microbiological culture reports		P4		Demo	2	OPSE	5
96			Adopt how to interpret the microbiological reports			A	Role Play		Formative Assessment	



PMS-614 PHARMACOLOGY-I 3(2-1)

Course Description

Pharmacology module is designed to supplement the students with pharmacological knowledge. This flexible and self-paced course can benefit medical professionals who need to take an introductory pharmacology course for training or continuing education purposes.

This pharmacology course will introduce the principles of pharmacokinetic and pharmacodynamics to explore the mechanism of action of pharmaceutical drugs on a molecular level.

Cognitive Domain

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

1. Describe the fundamental principles of drug action, including: basic pharmacokinetics, basic pharmacodynamics and receptor binding.
2. Differentiate the common side effects associated with major therapeutic drug classes and how they may impact patient care.
3. Construct an evaluation of a recently approved FDA medication.
4. Differentiate the various responsibilities of healthcare providers in the prescribing and administration of medications.

Skills Domain

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

1. Demonstrate knowledge of major drug classes, including therapeutic uses, mechanism of action and various routes of drug administration.
2. Compute basic and advanced dosage calculation.
3. Design a therapeutic treatment plan for a patient with a commonly treated disease state or disorder.

Affective Domain

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

1. Follow the specified norms of the IL, SGD teaching & learning.
2. Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.
3. Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.

TOS -PMS-614 PHARMACOLOGY-I 3(2-1)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: INTRODUCTION TO PHARMACOLOGY AND ITS BASIC PRINCIPLES											
1	Week-1	Definition and examples to explain Pharmacology	Define pharmacology	C1			Interactive Lecture/SGD	2	MCQ's	5	
2		Definition, Absorption, Dis-tribution, Metabolism and Elimination of drugs, Routes of drugs administration	Describe Pharmacokinetics and its principles	C2							
3		Practical	Perform routes of drugs administration			P4		Demo	2		OPSE
4			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.				A	Role Play	2		Formative Assessment
5	Week-2	Definition and overview of Pharmacodynamics, signal transduction, Dose response relationship, Intrinsic activity.	Explain Pharmacodynamics and its principles	C2			Interactive Lecture/SGD	2	MCQ's	5	
6		Practical	Identification various types of drugs preparations			P4		Demo	2	OPSE	
7			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.				A	Role Play	2	Formative Assessment	
TOPIC: CHOLINERGIC AGONISTS AND ANTAGONISTS											
8	Week-3	Cholinergic and anti-cholinergic drugs	Define Cholinergic drugs	C1			Interactive Lecture/SGD	2	MCQ's	5	
9			Explain cholinergic ag-onists and antagonists	C2							
10		Practical	Affects/Actions of drugs on the given systems/organs			P4		Demo	2		OPSE
11			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.				A	Role Play	2		Formative Assessment

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
12	Week-4	Introduction, Mechanism of action, adverse actions of: Ace-tylcholine, Pilocarpine, Edrophonium, Neostigmine, Echothiophate	Illustrate the properties of cholinergic agonists	C2			Interactive Lecture/SGD	2	MCQ's	5
13		Introduction, Mechanism of action, adverse actions of: At-ropine, Nicotine, Neuromuscular-Blocking Agents	Describe the properties of cholinergic antagonists	C2						
14		Practical	Adverse effects of this group of drugs on given body organs/ systems		P4		Demo	2	OPSE	
15			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
TOPIC: ADRENERGIC AGONISTS AND ANTAGONISTS										
16	Week-5	Adrenergic Agonists and antagonists	Define Adrenergic drugs	C1			Interactive Lecture/SGD	2	MCQ's	5
17			Explain adrenergic agonists and antagonists	C2						
18		Practical	Affects/Actions of drugs on the given systems/organs		P4		Demo	2	OPSE	
19			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
20	Week-6	Introduction, Mechanism of action, adverse actions of: Al-butanol, Dopamine, Epinephrine, Isoproterenol, Amphetamine, Ephedrine	Illustrate the properties of adrenergic agonists	C1			Interactive Lecture/SGD	2	MCQ's	5
21		Introduction, Mechanism of action, adverse actions of: Phenoxybenzamine, Prazosin, Atenolol, Carvedilol, Metoprolol, Propranolol, Reserpine, Reserpine	Describe the properties of adrenergic antagonists	C2						
22		Practical	Adverse effects of this group of drugs on given body organs/ systems		P4		Demo	2	OPSE	
23			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: NSAIDS AND OPIOID ANALGESICS											
24	Week-7	Salicylates, p-Aminophenol Derivatives, Indoles (indomethacin) and Related Compounds, Fenamates, Arylpropionic Acid Derivatives, Acetic Acid Derivatives, COX-2 Inhibitors	Define NSAIDS	C1			Interactive Lecture/SGD	2	MCQ's	5	
25			Explain Pharmacokinetics and Pharmacodynamics of NSAIDS	C2							
26			Discuss adverse actions of NSAIDS	C2							
27	Week-7	Practical	Affects/Actions of drugs on the given systems/organs		P4		Demo	2	OPSE	5	
28			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment		
29	Week-8	Morphine, Codeine and Other Phenanthrene Derivatives, Meperidine and Related Phenylpiperidine Derivatives	Explain pharmacokinetics and pharmacodynamics of opioid analgesics	C2			Team Base Learning	2	MCQ's	5	
30			Practical	Adverse effects of this group of drugs on given body organs/ systems		P4		Demo	2	OPSE	5
31				Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
TOPIC: GASTROINTESTINAL DRUGS											
32	Week-9	Gastrointestinal	List gastrointestinal drugs	C1			Interactive Lecture/SGD	2	MCQ's	5	
33		Pharmacokinetics and Pharmacodynamics	Explain Pharmacokinetics and Pharmacodynamics of PPIs	C2							
34			Explain Pharmacokinetics and Pharmacodynamics H2 Blockers	C2							
35		Practical	Affects/Actions of drugs on the given systems/organs		P3		Demo	2	OPSE	5	
36			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment		

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
37	Week-10	Pharmacokinetics and Pharmacodynamics	Explain Pharmacokinetics and Pharmacodynamics Antacids	C3			Interactive Lecture/SGD	2	MCQ's	5
38		Adverse actions	Describe Adverse actions of Antacids	C3						
39		Practical	Adverse effects of this group of drugs on given body organs/ systems		P2x		Demo	2	OPSE	
40			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
TOPIC: ANTI-HISTAMINE										
41	Week-11	Classification	Classify Anti-Histamine drugs	C2			Interactive Lecture/SGD	2	MCQ's	5
42		Pharmacokinetics and Pharmacodynamics	Explain Pharmacokinetics and Pharmacodynamics of Anti-Histamine drugs	C2						
43		Practical	Affects/Actions of drugs on the given systems/organs		P4		Demo	2	OPSE	
44			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
45	Week-12	Adverse actions	Describe Adverse actions of Anti-Histamine drugs	C1			Interactive Lecture/SGD	2	MCQ's	5
46		Practical	Adverse effects of this group of drugs on given body organs/ systems		P4		Demo	2	OPSE	
47			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
TOPIC: ANESTHETICS										
48	Week-13	Classification	Classify general anesthetics	C1			Interactive Lecture/SGD	2	MCQ's	5
49			Classify local anesthetics	C1						
50		Practical	Affects/Actions of drugs on the given systems/organs		P4		Demo	2	OPSE	
51			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
52	Week-14	Pharmacokinetics and Pharmacodynamics	Explain Pharmacokinetics and Pharmacodynamics of general anesthetics	C2			Interactive Lecture/SGD	2	MCQ's	5
53			Explain Pharmacokinetics and Pharmacodynamics of local anesthetics	C2						
54		Practical	Adverse effects of this group of drugs on given body organs/ systems		P4		Demo	2	OPSE	
55			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
TOPIC: THYROID AND ANTITHYROID DRUGS										
56	Week-15	Drugs used in the treatment of hypothyroidism, adverse effects of treatment with thyroid hormone, drugs used in the treatment of hyperthyroidism	List the Anti-Thyroid drugs	C1			Interactive Lecture/SGD	2	MCQ's	5
57			Explain Pharmacokinetics and Pharmacodynamics of Thyroid and Antithy-roid Drugs	C2						
58		Practical	Affects/Actions of drugs on the given systems/organs		P2		Demo	2	OPSE	
59			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	
60	Week-16	Adverse actions	Describe Adverse actions of Thyroid and Antithyroid Drugs	C1			Interactive Lecture/SGD	2	MCQ's	5
61		Practical	Adverse effects of this group of drugs on given body organs/ systems		P4		Demo	2	OPSE	5
62			Comply SOPs of laboratory practices and adopt how to care and handle laboratory equipment's.			A	Role Play		Formative Assessment	

PMS-615 COMMUNICATION SKILLS 2(2-0)

Course Description

In this course, we delve into the multifaceted world of communication, equipping you with essential skills to excel in both academic and professional spheres. This course will explore the diverse landscape of communication, covering topics such as academic writing, various communication types, the nuances of effective communication, formal communication protocols, and mastering the art of interviews. This course will enhance the academic writing or an aspiring professional seeking to enhance student's interview. Through practical exercises, real-world examples, and interactive discussions, ensuring students gain a well-rounded understanding of communication strategies.

Cognitive Domain

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

1. **Describe the components and processes involved in various communication models.**
2. **Explain the advantages and challenges associated with different types of communication.**
3. **Apply principles of academic writing, including proper referencing, structure, and citation.**
4. **Demonstrate an understanding of formal communication protocols in professional settings**
5. **Formulate action plans to continually enhance communication skills beyond the course.**

Affective Domain

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

1. **Follow the specified norms of the IL, SGD teaching & learning.**
2. **Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.**
3. **Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.**

TOS -PMS-615 COMMUNICATION SKILLS 2(2-0)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO COMMUNICATION										
1	Week-1	Introduction to Communication	Define Communication	C1			Interactive Lecture/SGD	2	MCQ's	5
2		The process of communication	Explain with Examples of good, Effective communication in business	C2						
3	Week-2	Effective communication	Discuss the processs of communication	C2			Interactive Lecture/SGD	2	MCQ's	5
4		Models of communication	Discuss the Linear models of communication	C2						
5	Week-3	Models of communication	Describe the Transactional model of communication	C2			Interactive Lecture/SGD	2	MCQ's	5
6			Explain the Interactive models of communication	C2						
7		Communication in business	Discuss the Importance and benfits of effective communication in business	C2						
TOPIC: COMPONENTS OF COMMUNICATION										
8	Week-4	Discuss Sender, reciever, message, channel, Nonverbal, Visual Communication, Feedback, Noise, Decoding, Encoding	Explain components of communication	C2			Interactive Lecture/SGD	2	MCQ's	5
9		Physiological Barriers, language barriers, cultural, physical barriers	Describe communication barriers.	C2						
10	Week-5	Facial expressions, eye contact, posture, hand movements, and touch.	Explain Non-verbal communication	C2			Interactive Lecture/SGD	2	MCQ's	5
11		Active listening, Consistency, clarity, simpplicity, feedback, authenticity, coherency, empathy in communication	Discuss the principles of communication	C2						
12		Clarity, coherency, completeness, Conciseness, concretness, courtesy, correctness	Diss the Seven C in communication.	C2						

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: ACADEMIC WRITING										
13	Week-6	Communication for academic purpose	Explain the Key aspects of communicating for academic purpose	C1			Interactive Lecture/SGD	2	MCQ's	5
14		Introduction to academic writing	Discuss the Key elements in academic writing	C2						
15	Week-7	Introduction to academic writing	Discuss the principles in academic writing	C2			Interactive Lecture/SGD	2	MCQ's	5
16		Summarizing	Explain the Introduction to summary.	C2						
17			Explain the steps of writing summary.	C2						
18	Week-8	Paraphrasing and argumentation skills	Discuss the steps of doing paraphrasing	C2			Interactive Lecture/SGD	2	MCQ's	5
19		Textual cohesion	Explain of textual cohesion	C2						
TOPIC: FORMAL COMMUNICATION										
20	Week-9	Formal communication	Discuss The characteristics of formal communication	C1			Interactive Lecture/SGD	2	MCQ's	5
21		Informal communication networks	Differentiate the Formal vs Informal communication	C2						
22	Week-10	Computer mediated communication	Discuss the Benefits Computer-mediated communication	C3			Interactive Lecture/SGD	2	MCQ's	5

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: FORMAL WRITING										
23	Week-11	Business writing	Discuss the Types of business writing	C2			Interactive Lecture/SGD	2	MCQ's	5
24			Discuss the principles of business writing	C2						
25		Memos	Discuss the memos.	C2						
26			Discuss the steps of writing memos.	C2						
27			Discuss the structure and sample of memo.	C2						
28	Week-12	Letters	Explain the letter.	C2			Interactive Lecture/SGD	2	MCQ's	5
29			Explain the types of letters.	C2						
30			Explain the sample and informal letters.	C2						
31			Explain letter, types of letters, sample, informal letters	C2						
32		Reports	Discuss how to write report.	C2						
33	Explain the steps and structure of report		C2							
TOPIC: PRESENTATION SKILLS										
34	Week-13	Proposals	Explain types and examples of proposal	C2			Interactive Lecture/SGD	2	MCQ's	5
35		Circulars	Discuss the Key features and purposes of circulars	C2						

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
36	Week-14	Public speaking and presentation skills	Explain the similarities between public speaking and presentations.	C2			Interactive Lecture/SGD	2	MCQ's	5
37			Explain the differences between public speaking and presentations.	C2						
38		Effective public presentation skills	Discuss the Important tips for public presentation	C2						
TOPIC: AUDIENCE ANALYSIS										
39	Week-15	Audience analysis	Discuss How to analyze audience	C2			Interactive Lecture/SGD	2	MCQ's	5
40		Effective argumentation skills	Illustrate the Techniques to enhance argumentation skills.	C2						
41	Week-16	Interview skills	Explain the tips for a good interview.	C2			Interactive Lecture/SGD	2	MCQ's	5

MLT-601 HAEMATOLOGY-I 3(2-1)

This course will introduce the students to basic concepts in hematology, structures, and functions of bone marrow, blood cells, and hemoglobin. Students will be able to understand how erythropoiesis, granulopoiesis, and megakaryopoiesis take place and how it is regulated. This course will cover quantitative disorders of neutrophils, lymphocytes, eosinophils, basophils, and monocytes. It also covers hemostasis and qualitative and quantitative disorders of platelets. It will help in developing the practical skill of students by determining hemoglobin level, clotting time, bleeding time, and complete blood count with peripheral blood smear examination.

Cognitive Domain

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

1. **Describe hematology, blood composition, bone marrow, and hemato-poiesis**
2. **Discuss hemoglobin, anemia, physiological and pathological red blood cell hemolysis**
3. **Explain quantitative disorders of leukocytes and hematological neoplasms etiology and diagnosis**
4. **Describe hemostasis, coagulation pathways, quantitative and qualitative disorders of platelets**
5. **Demonstrate complete blood count and how peripheral blood smear is prepared and examined.**

Skills Domain

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

1. **Perform the procedure of venous blood sample collection.**
2. **Demonstrate hemoglobin level in a venous blood sample**
3. **Perform qualitative carbohydrate detection in an unknown sample independently**
4. **Perform qualitative Protein/Amino Acid detection in an unknown sample independently**
5. **Perform qualitative Lipids/Cholesterol Detection in an unknown sample independently**
6. **Perform donning & doffing technique of gloves independently**

Affective Domain

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

1. **Demonstrate Punctuality.**
2. **Follow the specified norms of the IL, SGD teaching & learning effectively,**
3. **Demonstrate the humbleness and use the socially acceptable language during academic and social interactions with human models, colleagues and teachers.**
4. **Demonstrate ethically competent decisions when confronted with an ethical, social or moral problem related to professional or personal life.**
5. **Comply with SOPs of practical & procedure effectively.**

TOS -MLT-601 HAEMATOLOGY-I 3(2-1)

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: INTRODUCTION TO HEMATOLOGY										
1	Week-1	Definition	Define blood	C1			Interactive Lecture/SGD	2	MCQ's	5
2		Blood composition	Describe the cellular and plasma compartments of blood	C2						
3		Blood functions	Discuss blood functions	C2						
4		Practical		Perform the procedure of venouse blood sample collection independently		P4		Demo	OPSE	
5				Comply to SOPs of venouse blood sampling collection			A	Role Play	Formative Assessment	
TOPIC: BONE MARROW										
6	Week-2	Introduction	Define Bone marrow	C2			Interactive Lecture/SGD	2	MCQ's	5
7		Structure	Describe bone marrow structure	C2						
8		Function	Explain bone marrow fuctions	C2						
9		Practical		Observe a bone marrow trephine biopsy slide under microscope independently		P4		Demo	OPSE	
10				Comply to SOPs of bone marrow trephine biopsy slide examination			A	Role Play	Formative Assessment	
TOPIC: HEMATOPOIESIS										
11	Week-3	Introduction	Describe hematopoiesis	C2			Interactive Lecture/SGD	2	MCQ's	5
12		Prenatal & postnatal Hematopoiesis	Discuss blood formation intrauterine & extrauterine life	C2						
13		Sites of Hematopoiesis	Explain sites of hematopoiesis	C2						
14		Regulation of Hematopoiesis	Discuss growth factors that regulate hematopoiesis	C2						
15		Practical		Observe erythropoieis developmental stages under microscope independently		P4		Demo	OPSE	
16				Comply to SOPs of bone marrow aspirate smear examination			A	Role Play	Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: ERYTHROPOIESIS										
17	Week-4	Definition	Define erythropoiesis	C1			Interactive Lecture/SGD	2	MCQ's	5
18		Developmental stages	Explain developmental stages of erythropoiesis	C2						
19		Regulation of erythropoiesis	Discuss the growth factors that regulate rate of hematopoiesis	C2						
20		Practical	Perform the procedure of total red blood cell count by Neubauer chamber independently			P4	Demo	2	OPSE	
21			Comply to SOPs red blood cell count by manual method			A	Role Play		Formative Assessment	
TOPIC: HEMOGLOBIN										
22	Week-5	Introduction	Define Hemoglobin	C1			Interactive Lecture/SGD	2	MCQ's	5
23		Structure	Describe hemoglobin structure	C2						
24		Hemoglobin synthesis	Discuss hemoglobin synthesis	C2						
25		Hemoglobin functions	Explain hemoglobin function	C2						
26		Practical	Perform the procedure of hemoglobin estimation by Sahli's method independently			P4	Demo	2	OPSE	
27	Comply to SOPs hemoglobin estimation by Sahli's method				A	Role Play	Formative Assessment			
TOPIC: ANEMIA										
28	Week-6	Definition	Define anemia	C1			Interactive Lecture/SGD	2	MCQ's	5
29		Classification	Classify anemia on the basis of etiology and red blood cell morphology	C2						
30		Clinical symptoms	Describe clinical presentation of different types of anemia	C2						
31		Lab diagnosis	Discuss baseline laboratory diagnosis for anemia	C2						
32		Practical	Examine peripheral blood film under microscope of anemia patient independently			P4	Demo	2	OPSE	
33			Comply to SOPs for observation of peripheral blood smear of a patient having anemia			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: RED BLOOD CELLS HEMOLYSIS										
34	Week-7	Introduction	Define Hemolysis	C1			Interactive Lecture/SGD	2	MCQ's	5
35		Physiological & pathological Hemolysis	Describe physiological and pathological hemolysis	C2						
36		Hemolytic anemia classification	Classify hemolytic anemia	C2						
37		Clinical symptoms	Describe clinical presentation of different types of hemolytic anemia	C2						
38		Lab diagnosis	Discuss laboratory diagnosis of hemolytic anemia	C2						
39		Practical	Examine peripheral blood film under microscope of hemolytic anemia patient independently			P4	Demo	2	OPSE	5
40	Comply to SOPs for observation of peripheral blood smear of a patient having hemolytic anemia				A	Role Play	Formative Assessment			
TOPIC: GRANULOPOIESIS / MYELOPOIESIS										
41	Week-8	Definition	Define granulopoiesis	C1			Interactive Lecture/SGD	2	MCQ's	5
42		Developmental stages	Describe developmental stages of granulopoiesis	C2						
43		Regulation of granulopoiesis	Discuss regulation of granulopoiesis	C2						
44		Practical	Perform the procedure of differential leukocytes count independently			P4	Demo	2	OPSE	5
45			Comply to SOPs for differential leukocyte count of normal healthy individual			A	Role Play			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: WBC DISORDERS											
46	Week-9	Introduction	Define disorders of leukocytes	C1			Interactive Lecture/SGD	2	MCQ's	5	
47		WBCs disorder types	Classify leukocytes disorders	C2							
48		Leukocytosis	Describe leukocytosis	C2							
49		Leukopenia	Describe leukopenia	C2							
50		Practical		Perform the procedure of total leukocytes count independently		P4		Demo	2		OPSE
51	Comply to SOPs for procedure of total leukocyte count					A	Role Play	Formative Assessment			
TOPIC: NEUTROPHILIA, NEUTROPENIA, MONOCYTOSIS AND MONOCYTOPENIA											
52	Week-10	Introduction to neutrophilia and neutrophenia	Define neutrophilia and neutropenia	C1			Interactive Lecture/SGD	2	MCQ's	5	
53		Causes of neutrophilia and neutrophenia	Discuss causes of neutrophilia and neutropenia	C2							
54		Introduction to monocytosis and monocytopenia	Define monocytosis and monocytopenia	C1							
55		Causes monocytosis and monocytopenia	Discuss causes of monocytosis and monocytopenia	C2							
56		Practical		Perform the procedure of absolute neutrophil and monocyte count independently		P4		Demo	2		OPSE
57				Comply to SOPs for the procedure of absolute neutrophil and monocyte count			A	Role Play			Formative Assessment

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: LYMPHOCYTOSIS AND LYMPHOPENIA											
58	Week-11	Introduction of lymphocytosis	Define lymphocytosis	C1			Interactive Lecture/SGD	2	MCQ's	5	
59		Causes of Lymphocytosis	Discuss causes of lymphocytosis	C2							
60		Introduction of Lymphopenia	Define lymphopenia	C1							
61		Causes of Lymphopenia	Discuss causes of lymphocytosis	C2							
62		Practical		Perform the procedure of absolute lymphocytes count independently		P4		Demo	2	OPSE	5
63				Comply to SOPs for the procedure of absolute lymphocyte count			A	Role Play		Formative Assessment	
TOPIC: BASOPHILIA, BASOPENIA, EOSINOPHILIA AND EOSINOPENIA											
64	Week-12	Introduction to basophilia and eosinophilia	Define basophilia and eosinophilia	C1			Interactive Lecture/SGD	2	MCQ's	5	
65		Causes of Basophilia and eosiniphilia	Discuss basophilia and eosinophilia	C2							
66		Introduction of basopenia and eosinopenia	Define basopenia and eosinopenia	C1							
67		Causes of basopenia and eosinopenia	Discuss causes of basopenia eosinopenia	C2							
68		Practical		Perform the procedure of absolute basophil and eosinophil counts independently		P4		Demo	2	OPSE	5
69				Comply to SOPs for the procedure of absolute basophil and eosinophil counts			A	Role Play		Formative Assessment	

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items
				C	P	A				
TOPIC: HEMATOLOGICAL NEOPLASM										
70	Week-13	Introduction	Define hematological neoplasm	C1			Interactive Lecture/SGD	2	MCQ's	5
71		Classification	Classify hemtological neoplasm	C2						
72		Etiology of Leukemia	Discuss cuases of hematological neoplasm	C2						
73		Clinical Features	Describe clinical features of different hematological neoplasm	C2						
74		Laboratory diagnosis	Discuss laboratory diagnosis of different types hematological neoplasms	C2						
75		Practical	Examine few common leukemia slides under microscope independently			P4	Demo	2	OPSE	5
76	Comply to SOPs for the procedure of smear examination under microscope				A	Role Play	Formative Assessment			
TOPIC: MEGAKARYOPOIESIS										
77	Week-14	Introduction	Define megakaryopoiesis	C1			Interactive Lecture/SGD	2	MCQ's	5
78		Developmental stages	Describe deveopmental stages of megakaryopoiesis	C2						
79		Regulation of Megakaropoiesis	Discuss regulation of megakaryopoiesis	C2						
80		Thrombocytosis	Explain thrombocytosis and its causes	C2						
81		Thrombocytopenia	Explain thrombocytopenia and its causes	C2						
82		Practical	Perform the procedure of platelets count by maneul method independently			P4	Demo	2	OPSE	5
83	Comply to SOPs for the procedure of platlelts count				A	Role Play	Formative Assessment			

S.No	Weeks	Content	Learning Outcomes	Domain			MIT's	Hours	Assesment	No of Items	
				C	P	A					
TOPIC: HEMOSTASIS											
84	Week-15	Introduction	Define hemostasis	C1			Interactive Lecture/SGD	2	MCQ's	5	
85		Types of Hemostasis	Classify hemostasis	C2							
86		Platelets structure and functions	Describe structure and functions of platelets	C2							
87		Coagulation factors	Discuss coagulation factors	C2							
88		Coagulation Cascade (Pathways)	Illustrate coagulation pathways	C2							
89		Practical		Perform the procedure of bleeding time and clotting time independently		P4		Demo	2	OPSE	5
90			Comply to SOPs for the procedure of bleeding time and clotting time			A	Role Play		Formative Assessment		
TOPIC: COMPLETE BLOOD COUNT AND PERIPHERAL BLOOD FILM EXAMINATION											
91	Week-16	Introduction	Define complete blood count and blood cell morphology	C1			Interactive Lecture/SGD	2	MCQ's	5	
92		Componants of complete blood count	Describe componants of complete blood count	C2							
93		Blood cells morphology	Discuss erythrocyte, leukocyte and platelet morphology	C2							
94		Interpretation of complete blood count	Describe interpretation of each componant of complete blood count	C2							
95		Practical		Perform the procedure of peripheral blood film preperation and microscopic examination independently		P4		Demo	2	OPSE	5
96				Comply to SOPs for the procedure of peripheral blood smear preperation and examination			A	Role Play		Formative Assessment	

Recommended Text Books

RRT-601 RESPIRATORY THERAPY-I

- Oxford book of emergency medicine.
- Critical care medicine At A Glance. Richard Leasch.
- The ICU book of paul I marino.
- Churchill's pocket book of intensive care by simon M. whitely.
- Quick critical care reference by Susan B Stillwell.

ICT- 601 INTENSIVE CARE MONITORING-I 2(1-1)

- Egan's Fundamentals of Respiratory Care – Robert L. Wikins, James K Stoller, Craig L Scalan (Mosby)
- The ICU Book – Paul L Marino (Lippincott, Williams & Wilkins)
- Practical Methods for Respiratory Care – Raymond Sibberson (Mosby)
- Pulmonary Respiratory Therapy (secretes) [Pollye Parson John E Heffner]
- Washington's Manuals of Critical Care

PMS-612 GENERAL PATHOLOGY-I

- Kumar, Abbas and Aster; 9 th edition. Robbins Basic Pathology.
- Review of general pathology by Muhammad Firdous 9th edition
- Short textbook of pathology 3rd edition by Inam Danish

PMS-613 MEDICAL MICROBIOLOGY-I

- Sherris Medical Microbiology: An Introduction to Infectious Diseases. Ryan, K. J., Ray, C. G., 4 th ed. McGraw-Hill, 2003.
- Clinical Microbiology Made Ridiculously Simple. Gladwin, M. & Trattler, B., 3rd ed. MedMaster, 2004.
- Medical Microbiology and Infection at a Glance. Gillespie, S., H., Bamford, K., B., 4th ed. WileyBlackwell, 2012.

- Medical Microbiology, Kayser, F., H., & Bienz, K., A., Thieme, 2005.
- Review of Medical Microbiology and Immunology. Levinson, W., 10th ed. McGraw Hill Professional, 2008.
- Jawetz, Melnick, & Adelberg's Medical Microbiology. Brooks, G., Carroll, K., C., Butel, J., & Morse, S., 26th ed. McGraw-Hill Medical, 2012.

PMS-614 PHARMACOLOGY-I

- Lippincott s pharmacology (text book) by Mycek 6th Edition published by Lippincott Raven 2012.
- I Katzung textbook of pharmacology (Reference Book) by Bertram Katzung 12th Edition, Published by Appleton.

PMS-615 COMMUNICATION SKILLS

- Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press 1986. ISBN 0 19 431350 6.
- Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 1. Third edition. Oxford University Press. 1997. ISBN 0194313492.
- Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press. 1997. ISBN 0194313506
- Intermediate by Marie-Christine Boutin, Suzanne Brinand and Francoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 0 19 435405 7 Pages 20-27 and 35-41.
- Reading. Upper Intermediate. Brain Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 453402 2.

MLT-601 HAEMATOLOGY-I

- Essential of Hematology, A.V Hoff Brand, 6th edition 2006
- Essential of hematology by JP
- Clinical Hematology, G.C Degrunchi, 5th edition 2002
- Practical Hematology, Dacie J.V. 10th edition 2012





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