BAQAI MEDICAL UNIVERSITY
BAQAI MEDICAL COLLEGE
FIRST PROFESSIONAL M.B.B.S.
MODULAR GUIDE 2022 - RESPIRATION

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FIRST PROFESSIONAL M.B.B.S

STUDY GUIDE 2022

RESPIRATORY MODULE

BAQAI MEDICAL UNIVERSITY
BAQAI MEDICAL COLLEGE
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LIST OF ABBREVIATIONS

BMC	**Baqai Medical College**
BMU	**Baqai Medical University**
CBL	**Case Based Learning**
LGIF	**Large Group Interactive Format**
LOs	**Learning Objectives**
MCQs	**Multiple Choice Questions**
MSK	**Musculoskeletal**
OSCE	**Objective Structured Clinical Examination**
OSPE	**Objective Structured Practical Examination**
PEaRLS	**Professionalism, Ethics, Research, Leadership, Communication Skills**
PW	**Practical Work**
SDL	**Self Directed Learning**
SGD / SGT	**Small Group Discussion / Small Group Teaching**
TS	**Teaching Strategy**

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BAQAI MEDICAL UNIVERSITY VISION STATEMENT

To evolve as a nucleus for higher learning with a resolution to be socially accountable, focused on producing accomplished health care professionals for services in all spheres of life at the national and global level.

BAQAI MEDICAL UNIVERSITY MISSION STATEMENT

University is dedicated to the growth of competencies in its potential graduates through dissemination of knowledge for patient care, innovation in scholarship, origination of leadership skills, and use of technological advancements and providing.

BAQAI MEDICAL COLLEGE MISSION STATEMENT

To produce medical graduates, who are accomplished and responsible individuals and have skills for problem solving, clinical judgment, research & leadership for medical practice at the international level and are also aware of the health problems of the less privileged rural and urban population of

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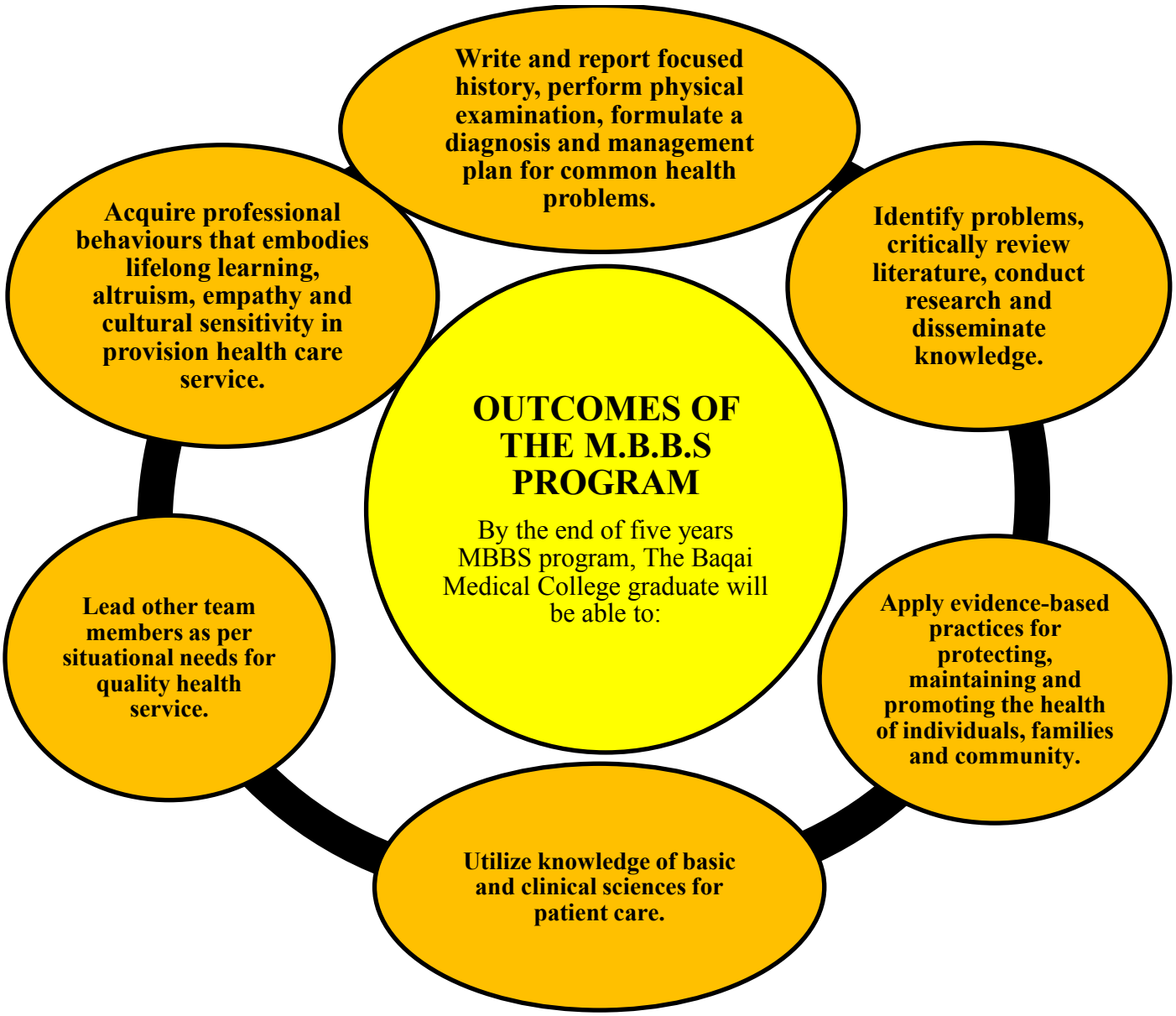

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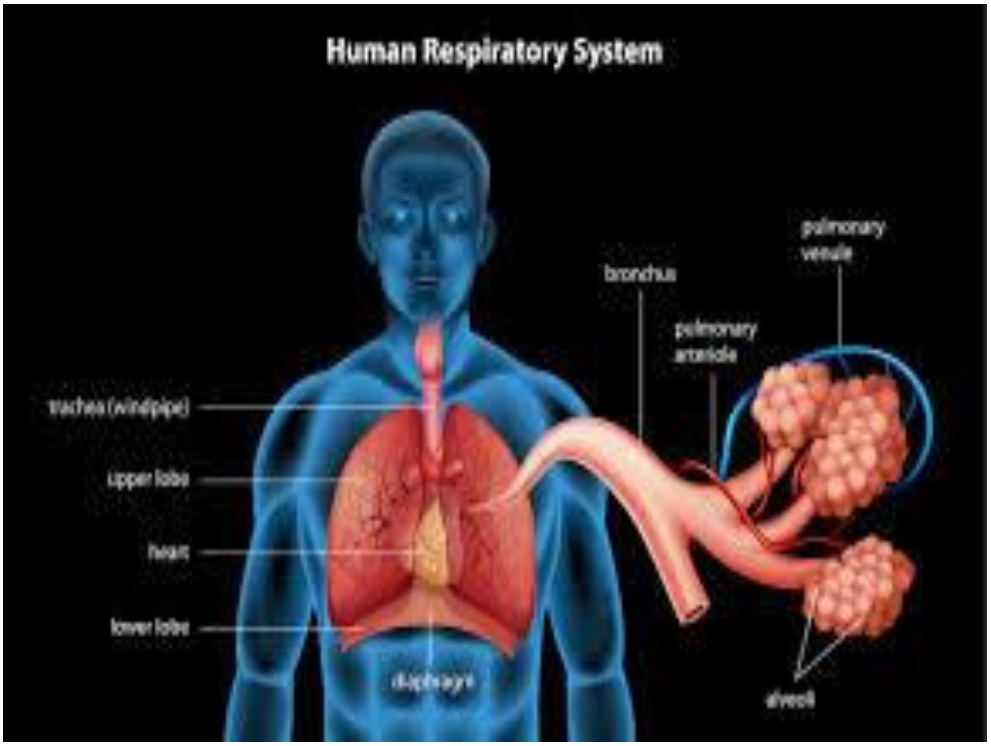
INTRODUCTION TO RESPIRATORY MODULE GUIDE:



Year to be taught: First Professional M.B.B.S. 2022
Placement of Respiratory Module: Fourth
Duration: 5 weeks + 1 day Date: 16. 08. 2022 – 16. 09. 2022 **End of Module Assessment (EOA):** 26. 09. 2022

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This module deals the study of lungs and respiratory passageways. It consists of an extensive and in-depth study of the developmental, gross and functional aspects of respiratory system.

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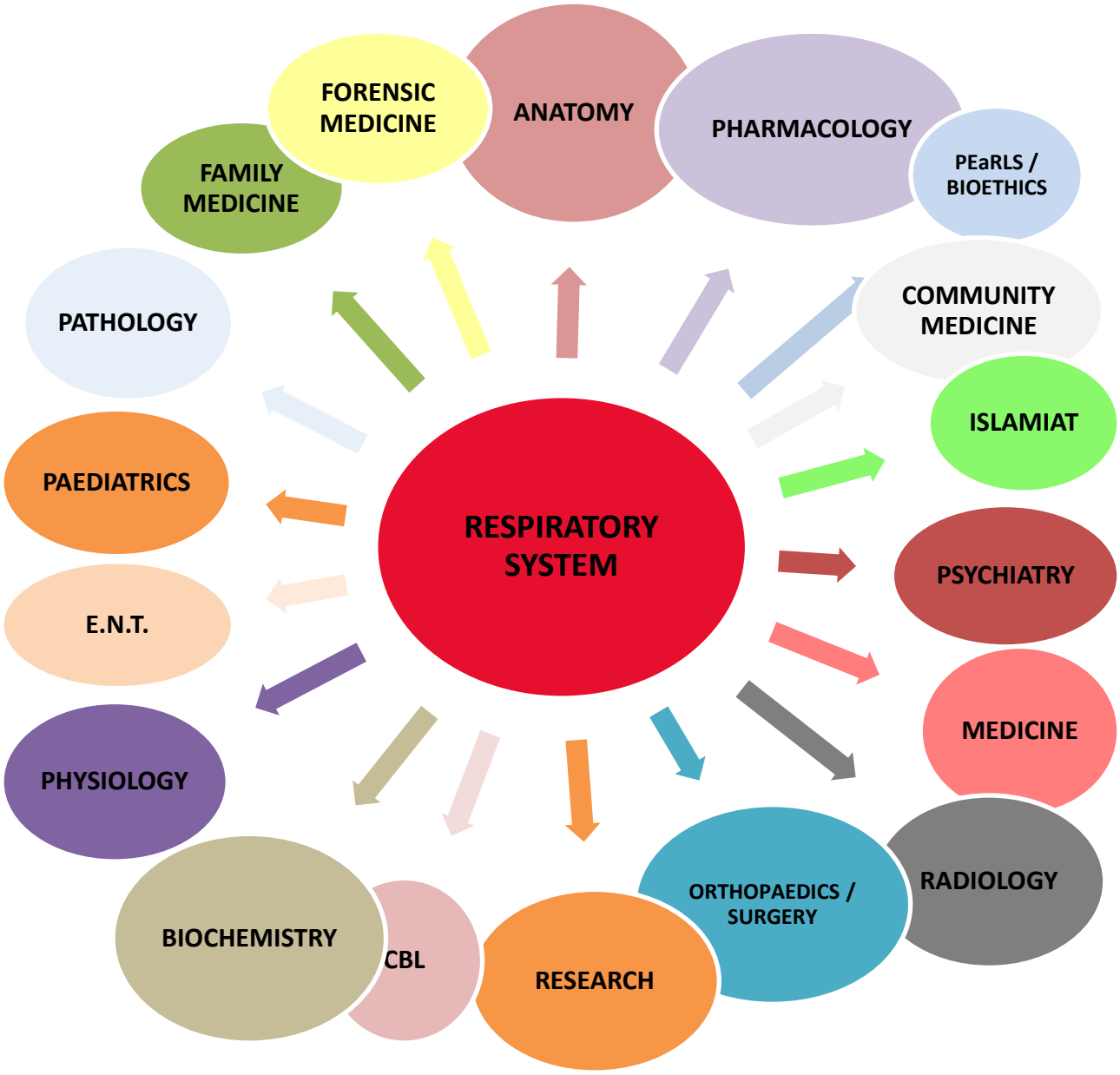

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DEPARTMENT OF PHYSIOLOGY

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC AND OBJECTIVES	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
Pulmonary volumes and capacities, alveolar ventilation and dead space: o List & Define Lung "Volumes" & "Capacities". o List the Components of Respiration. o Define "Ventilation" & the "Dead Space". o Explain the Measurement of Dead Space by using Nitrogen Meter. o Categorize the Ventilation with their Measurements. o Describe the Effect of Rapid & Deep Breathing on Alveolar Ventilation.	Lecture	Lecture hall – 1	Dr. Adnan Ahmed	▪ BCQ ▪ SEQs ▪ OSPE
Respiratory passages, cough and sneezing reflex: o Enlist Main respiratory passages	Lecture	Lecture hall - 1	Dr. Saba Abrar	▪ BCQs ▪ SEQs

○ Define cough reflex with its components ○ Explain the mechanism of the cough reflex ○ Define the sneezing reflex with its components ○ Explain the mechanism of the sneezing reflex. ○ List protective reflexes. ○ Summarize the importance of protective reflexes. ○ Explain Hering – Breuer reflex with its importance				
Respiratory function of nose, vocalization and phonation: ○ List & Define the "Functions of Nose". ○ Describe "Turbulent Precipitation". ○ Define "Phonation" & "Vocalization". ○ Discuss the Role of Vocal Cords in Phonation. ○ Explain Mechanism of "Speech". ○ Relation of Speech with Respiration.	Lecture	Lecture hall – 1	Dr.Syed Adnan Ahmed	▪ BCQs
Pulmonary circulation, 3 zones according to blood flow:	Lab practical	Physiology lab	DrRuqayaNangrejo	▪ Ospe ▪ Seq ▪ Leq

○ Define dynamics of pulmonary capillaries. ○ List pressures in different pulmonary vessels. ○ Summarize the zones of pulmonary circulation. ○ Define Ventilation/ Perfusion Ratio & effects of its mismatching. ○ Explain the mechanism of development of pulmonary edema.				
Compliance of the lungs surfactant, pulmonary capillary dynamics, pulmonary edema and pleural effusion: ▪ Define lung compliance. ▪ List the factors affecting lung compliance. ▪ Summarize the role of surfactant in maintaining lung compliance. ▪ Explain compliance work, tissue resistance work & airway resistance ○ Define dynamics of pulmonary capillaries.	Lecture	Lecture hall - 1	Dr Sobia Khan	▪ Bcq ▪ Seq ▪ Ospe

○ List pressures in different pulmonary vessels. ○ Summarize the zones of pulmonary circulation. ○ Define Ventilation/ Perfusion Ratio & effects of its mismatching. ○ Define Ventilation/ Perfusion Ratio & effects of its mismatching.				
Chest Auscultation ▪ Describe the purpose of lungs ▪ Describe basic anatomy and pathophysiology of lungs ▪ Learn how to auscultate the lungs ▪ Identify basic landmarks of anterior and posterior thorax ▪ Learn to differentiate between normal and abnormal respiratory sounds	Physiology Lab	Skill Lab	Dr Sobia Khan	▪ Ospe
Respiratory membranes & Principles of Gas exchange **Define respiratory unit:** ▪ List the layers of respiratory membrane.	Lecture	Lecture hall - 1	Dr Saba Leeza	▪ Ospe ▪ Bcq

▪ List partial pressures of respiratory gases in atmosphere, humidified, alveolar & expired air. ▪ Explain mechanics of gaseous diffusion across the respiratory membrane. ▪ Summarize diffusion capacity of O2 & CO2.				
Ventilation Perfusion Ratio: ▪ Concept of V/Q (ventilation perfusion ratio), ▪ Significance of V/Q, ▪ Normal value of V/Q, ▪ Partial pressure of oxygen & carbon dioxide when V/Q is zero or infinity, ▪ Physiological shunt & its calculation, ▪ Physiological dead space & Bohr equation, ▪ Normal 3 zones of lungs according to V/Q, ▪ Effect of exercise on V/Q & ▪ Effect of smoking on V/Q	Lecture	Lecture hall - 1	Dr. M. Ali	▪ BCQs ▪ SEQs
Chest Auscultation: o Describe the purpose of lungs	Skill Lab	Physiology Lab	DrFizzah	▪ OSPE ▪ BCQs

○ Describe basic anatomy and pathophysiology of lungs ○ Learn how to auscultate the lungs ○ Identify basic landmarks of anterior and posterior thorax ○ Learn to differentiate between normal and abnormal respiratory sounds				
Transport of oxygen: ○ Define "Diffusion" & the "Partial Pressure" of a Gas. ○ ∗ Discuss the Role of RBCs in O2 Transportation. ○ ∗ Explain Diffusion of O2 during its Transportation to the Tissues. ○ Relate "Bohr" & "Haldane" effect with O2 – Hemoglobin Dissociation Curve.	Lecture	Lecture hall - 1	Dr Adnan Ahmed	▪ BCQs ▪ SEQs ▪ OSPE
02-Hb Dissociation Curve: ○ List the steps of O2 transport from lungs to the body tissues. ○ Define Bohr effect. ○ Summarize the role of hemoglobin (Hb) in O2 transport.	Lecture	Lecture hall - 1	Dr. Saba Leeza	▪ Bcq ▪ Seq ▪ Ospe

○ Explain Oxy – Hb dissociation curve ○ Discuss cases of curves. ○ Enlist the factorsresponsible for right and left shift of the curve ○ Define Haldene effect				
Chest Auscultation: ▪ Describe the purpose of lungs ▪ Describe basic anatomy and pathophysiology of lungs ▪ Learn how to auscultate the lungs ▪ Identify basic landmarks of anterior and posterior thorax ▪ Learn to differentiate between normal and abnormal respiratory sounds	physiology skill Lab	Physiology Lab	Dr. Saba Leeza	▪ Bcqs ▪ Ospe
Metabolic use of 02 by cells and 02 toxicity: ▪ Critical value of oxygen tension for cellular functions. ▪ Rate limiting factor as regard oxygen utilization is concerned ▪ Diffusion limit cell death ▪ Flow limit cell death,	Lecture	Lecture hall – 1	Dr. M. Ali	▪ BCQs ▪ SEQs

▪ Physiologic mechanism of oxygen toxicity, ▪ Complications of oxygen treatment of neonates secondary to respiratory distress syndrome, ▪ CNS manifestations of oxygen toxicity, ▪ Indications of hyperbaric oxygen use, ▪ Its use with caution in case of hypercapnea& ▪ Development of convulsions & coma after heavy exercise.				
Transportation of CO2, CO2 Poisoning & Management: o List the Main Functions of CO2. o Explain the Mechanism of CO2 Transport from Tissues to the Lungs. o Describe the Process of "Chloride Shift". o Discuss the Role of CO2 in the Maintenance of Blood pH. o Explain the Effects of "Hypo" &"Hyperventilation" on Blood pH	Lecture	Lecture hall – 1	Dr. Adnan Ahmed	▪ BCQs ▪ SEQs
Nervous Regulation of respiration:	Lecture	Lecture hall – 1	Dr. Adnan Ahmed	▪ BCQs ▪ SEQs

○ Categorize the Control Mechanisms of Breathing. ○ List the Respiratory Centers with their Functions. ○ Describe the Role of "DRG" in "Ramp Signals". ○ Explain the Mechanism of Change in Breathing Pattern During Exercise. ○ Define & Explain Hering – Breuer Inflation Reflex				
Pulse Oximeter: ○ Explain the normal oxygen saturation in arterial blood ○ Describe the two things a pulse oximeter can measure ○ List the parameters that are displayed on a pulse oximeter screen ○ Enlist the conditions which are not measured by a pulse oximeter ○ Discuss what should be done when the saturation falls ○ Review and understand the applicable regulation relative to monitoring pulse oximetry.	Physiology Lab	Skill Lab	Dr. Sobia Khan	▪ OSPE

○ List the use of pulse oximetry ○ Describe patient conditions that may affect pulse oximetry accuracy ○ Demonstrate a comprehensive patient assessment utilizing pulse oximetry. ○ List the precautions taken while monitoring pulse oximetry ○ Demonstrate the procedure of pulse oximetry monitoring				
Regulation of respiration during exercise: ○ Enlist the Effects of exercise on Respiration, ○ Effects on Pulmonary ventilation ○ Effects on Diffusing Capacity for oxygen ○ Effects on consumption of oxygen ○ Effects on Oxygen Debt ○ Effects on V02 Max ○ Effects on Respiratory Quotient	Lecture	Lecture hall – 1	Dr. Saba Leeza	▪ BCQs ▪ SEQs
Physiology Quiz:	Lecture	Lecture hall1	Dr. M. Ali	▪ BCQs ▪ SEQs

○ The important physiologic aspects of respiration i.e. ○ Respiratory muscles, Pressure changes during inspiration & expiration, Functions of surfactant, Transport of oxygen & carbondioxide& Respiratory centers.				
Stethography: ○ List the requirements to perform Stethography ○ Describe the procedure to perform Stethography. ○ Describe the procedure to perform Stethography.	Physiology Lab	Skill Lab	Dr. Sobia Khan	▪ OSPE
Hypoxia 02 Therapy and Cynosis: ○ Define "Hypoxia" & the "Cyanosis". ○ List & Describe the Types of "Hypoxia". ○ List & Explain the Mechanisms that results in "Hypoxia". ○ Define "Acclimatization". ○ List & Explain the "Acclimatization" of Body in Response to "Hypoxia". ○ Define & List the Causes of "Cyanosis".	Lecture	Lecture hall – 1	Dr. Adnan Ahmed	▪ BCQs ▪ SEQs

○ Explain the Benefits of "O2 Therapy" in "Hypoxia"				
Stethography ○ List the requirements to perform Stethography ○ Describe the procedure to perform Stethography. ○ Describe the procedure to perform Stethography	Physiology Lab	Skill Lab	Dr. Sobia Khan	▪ OSPE
Mechanism of hyper expiratory flow, Hyper Capnia: • Concept of maximum expiratory flow • Definition & mechanism of collapse of bronchioles, • Normal maximum expiratory flow volume curve & effect of inside air on it, • Maximum expiratory flow volume curve in constrictive & obstructive diseases, • Causes of hypercapnia & • Manifestations & mechanism of death in hypercapnia	Lecture	Lecture hall – 1	Dr. M. Ali	▪ BCQs ▪ SEQs
Stethography:	Physiology Lab	Skill Lab	Dr. Saba Leeza	▪ Ospe

○ List the requirements to perform Stethography ○ Describe the procedure to perform Stethography. ○ Describe the procedure toperform Stethography.				
Study of blood gases and blood PH: ○ Enumeration of tests performed routinely by clinical respiratory physiologists, ○ Significance of blood Ph& PO2 & blood CO2, ○ Determination of blood pH, ○ Measurement of blood CO2 & ○ Measurement of PO2.	Lecture	Lecture hall – 1	Dr. M. Ali	▪ BCQs ▪ SEQs
Artificial Respiration: ○ State theideal method of artificial respiration ○ Describe the requirements of artificial breathing ○ Compare the difference between both breathing	Lecture	Lecture hall – 1	Dr. Saba Leeza	▪ BCQs ▪ SEQs

DEPARTMENT OF BIO-CHEMISTRY

By the end of lecture/module, first professional MBBS student will be able to:

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TOPIC AND OBJECTIVES	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
Introduction to lipids: •Define and classify lipids according to Bloor's criteria •List the derived lipids of biological importance •List the simple lipids of biological importance •List the compound lipids of biological importance	Lecture	Anatomy lecture hall-1	Ms. Nazish	▪ MCQ ▪ SEQ
Phospholipids: o Define and classify lipids according to Bloor's criteria o List the derived lipids of biological importance o List the simple lipids of biological importance o List the compound lipids of biological importance	Lecture	Anatomy lecture hall-1	Ms. Nazish	▪ MCQs ▪ SEQs

Glycolipids: o List important glycolipids of biological importance o Differentiate in a tabular form between cerebrosides and gangliosides.	Lecture	Anatomy lecture hall-1	Ms. Nazish	▪ MCQs ▪ SEQs
Fatty acids, glycerol and essential fatty acids: • Define fatty acids and classify them. • List the biological of essential fatty acids • List the sources and clinical uses of glycerol • Draw a simple structure of triglycerides	Lecture	Anatomy Lecture Hall 1	Ms. Nazish/ Dr. Farhan	MCQs SEQs
Eicosanoids, their classification: • Define eicosanoids • Classify prostaglandins into 4 major groups. • Discuss the synthesis and catabolism of prostaglandins. • List the important inhibitors and	Lecture	Anatomy Lecture Hall 1	Dr. Iffat	MCQs SEQs

stimulants of PG synthesis • Identify the occurrence and distribution of PGs in the body • Generalize the important function of PGs • List the functions of other eicosanoids: prostacyclins, thromboxanes, leukotrienes and lipoxins				
Oxidation of even chain fatty acids 1: • Discuss the β–oxidation of fatty acids. • Relate the use of fatty acids for energy by cardiac muscles in fasting state • Identify the role of carnitine in β–oxidation of fatty acids. • Describe the end product and reactions involved in β–oxidation of even chain fatty acids.	Lecture	Anatomy Lecture Hall 1	Dr.Iffat	MCQs SEQs

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Energetics of beta oxidation of even chain fatty acids (lipid metabolism): • Calculate the number of ATPs produced by β–oxidation of 16-C fatty acid palmitate • Odd chain fatty acid oxidation.	Lecture	Anatomy Lecture Hall 1	Dr.Iffat	MCQS SEQS
Biological Oxidation-1: • Define biological oxidation • Relate the process of biological oxidation with ATP synthesis • List the co-enzymes involved in biological oxidation • Define electron transport chain. • Discuss about mitochondrial electron transport chain. • Identify the importance of use of oxygen in electron transport chain.	Lecture	Anatomy Lecture Hall 1	Dr.Beenish	MCQS SEQs

Biological oxidation 2: • Define oxidative phosphorylation • Relate the role of Electron Transport chain and oxidative phosphorylation with emphasis on Mitchell's chemiosmotic hypothesis • Relate the structure ofATP synthase enzyme with the process of ATP production in mitochondria.	Lecture	Anatomy lecture Hall 1	Dr.Iffat	MCQs SEQs
Inhibitors of ETC: • List the inhibitors of electron transport chain. • Define uncouplers and relate their function	Lecture	Lecture Hall 1	Dr.Beenish	MCQs SEQs
Introduction to acid base balance: • Define pH • Define acids and bases with suitable examples. • Differentiate between strong and weak acids and bases	Lecture	Lecture Hall 1	Dr. Iffat	MCQs SEQs

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Buffers: • Define buffer. • Describe the mechanism of buffer action • List the major sources of acids in the body • List the various buffer systems in plasma and the erythrocytes • Define 'alkali reserve' • Outline the different mechanisms which regulate the pH of blood • Identify the first line of defense • Describe the buffering action of plasma proteins and hemoglobin	Lecture	Lecture Hall 1	Dr. Iffat	MCQs SEQs

Role of respiration in acid-base balance: • Explain the mechanism of bicarbonate buffer system in blood • Identify the link between bicarbonate buffer system and respiration. • Explain the role of respiration in pH regulation	Lecture	Lecture Hall-1	Dr.Iffat	MCQs SEQs
Spectrophotometry (practical): • Define spectrophotometry • Identify visible light as part of the electromagnetic spectrum. • Quote the application of spectrophotometer • Identify the components on the equipment • Describe the working of spectrophotometer • Discuss the terms. • Incident light, transmitted light, transmittance and optical density.	Lecture	Anatomy Lecture hall -1	Ms. Nazish/ Dr. Farhan	MCQ OSPE

• Describe Lambert-Beers Law. • Relate the function of spectrophotometer with that of estimating the concentration of biomolecules in a solution				
Introduction to Practicals of estimation of biochemical parameters (practical): • List the type of body fluids to estimate the value of a biochemical parameter. • Describe the concept of interpreting a result. • Define the terms stock standard solution and sample size. • Identify the need for using stock standard solutions • Calculate the concentration of stock standard solutions • Draw a concentration and optical density graph to construct a 'line of best fit'	Lecture	Anatomy Lecture Hall-1	Ms. Nazish/ Dr. Farhan	MCQs SEQs OSPE

for the purpose of obtaining the concentration of sample.				

DEPARTMENT OF ANATOMY

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC AND OBJECTIVES	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
GROSS ANATOMY **THORACIC WALL:** Understand the structures of thoracic wall. Learn the movements of thoracic wall. Discuss the inlet and outlet of thorax. Enlist the structure passing through it.	Lecture	Anatomy lecture hall 1	Dr. Javeria	MCQs SEQs
Gross features of thoracic vertebrae: o Describe the gross features of the thoracic vertebrae; vertebral body, IV disk, Laminae, pedicles,intervertebra	Lecture	LRC	Dr. Araj	MCQs SEQs

l foramina, processes and important ligaments. **GENERAL FEATURES + ATTACHMENT OF TYPICAL RIBS** • Classify the ribs. • Identify the different parts of typical rib. • Discuss the features of typical ribs. **GENERAL FEATURES + ATTACHMENT OF ATYPICAL RIBS** • List and identify the different parts of atypical rib. • Discuss the features of atypical ribs. **THORACIC CAVITY DIVISION, BOUNDARIES OF MEDIASTINUM &JOINTS OF THORACIC CAGE** • Classify and list the joints of thorax • Identify the structures of the thoracic cavity • Discuss the division and boundaries of mediastinum				

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THORACIC MUSCLES, INTER COSTAL SPACES : • Identify the different layers of thoracic walls • Identify Intercostal muscles • Discuss about the contents of intercostal spaces • Describe &Explain the origin of intercostal arteries • Describe &Explain the origin, course and distribution of intercostal nerves • Discuss about the branches and course of internal thoracic artery • Clinically correlate to the thoracic wall& its abnormalities **DIAPHARGM:** • Describe the origin and insertion of the diaphragm • Understand the structures of diaphragm. • Describe the openings of the diaphragm. • Learn the function and movement of it. • Describe the nerve supply of it.	Lecture	Anatomy Lecture Hall 1	Dr. Shahid	MCQS SEQS

• Discuss the clinical correlates **<u>THORACIC MOVEMENTS WITH RESPIRATION (INCLUDING INVOLVEMENT OF ABDOMINAL WALL):</u>** • About principles of respiratory movement • Movements involved to change diameter of thoracic cage • Movement in different phases of respiration, both under normal and stressed condition.				

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STERNUM : • Describe the anatomical position of the sternum. • Enlist the bones including in the sternum? • Describe the muscles attachment and important structures passing around it. • Describe the location and shape of the sternum • Describe the parts of the sternum • Describe the articulations and muscle attachments • Discuss the relations and clinical importance • Correlate to applied anatomy	Lecture	Anatomy Lecture Hall 1	DrJaveria	MCQS SEQS

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PLEURA: • Describe the gross features of pleura. • Explain the division of the pleural layers • Describe the pleural cavity and the pleural reflections • Outline the surface anatomy related to pleural reflections • Memorize the nerve supply and blood supply of it. • Discuss the clinical application related to the topic	Lecture	Anatomy lecture hall 1	Dr. Rashid	MCQs SEQs
LUNGS: • Enlist the surfaces of the lungs. • Differentiate left and right lung. • Explain the lobes, fissures and segments of each lung. • Describe root of the lungs. • Describe & Explain the bronco pulmonary segments and their importance • Name vascular supply and lymphatic drainage of it. • Discuss about the nerve supply to lungs, pulmonary plexus and	Lecture	Anatomy Lecture hall - 1	Dr. Tayyaba	▪ MCQs ▪ SEQs

the importance of phrenic nerve • Review the clinical conditions related to it. **VASCULATURE OF LUNGS BRONCHIAL & PULMONARY:** • Describe the route and alternative roles of the two vascular system that permeate lung tissue **SURFACE ANATOMY:** • Outline the surface anatomy of the thorax				
TRACHEA: • Describe the trachea. • Name the structures related to it. • Enlist the blood and nerve supply and lymphatic drainage.	Lecture	Anatomy Lecture hall - 1	Dr. Tayyaba/DrAraj	▪ MCQs ▪ SEQs

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LARYNX: • Describe the extent of it • Enlist the cartilage on it • Describe the mucosal folds • Describe the muscle of larynx • Describe the nerve supply and blood supply of larynx.	Lecture	Anatomy Lecture hall - 1	Dr. Shahid/DrJaveria	▪ MCQs ▪ SEQs
NOSE: • Describe the parts of the nose • Describe the features of each parts? • How does the lateral and medial walls of the nose forms? • Describe the bloodsupply, nervesupply and lymphatics of each part?	Lecture	Anatomy Lecture hall - 1	DrShahid	▪ MCQs ▪ SEQs
PARANASAL SINUS: • Describe the functions and gross anatomy of the paranasal sinus.	Lecture	Anatomy Lecture hall - 1	DrAraj	▪ MCQs ▪ SEQs

HEMIAZYGOUS VEIN/ACCESSORY VEIN:	Lecture	Anatomy Lecture hall - 1	Dr. Javeria	▪ MCQs ▪ SEQs
EMBRYOLOGY **<u>DEVELOPMENT OF RIBS & VERTEBRAE:</u>** • Discuss the stages of development of the vertebral column • Discuss the development of ribs from costal elements of primitive vertebrae • Clinically correlate to associated congenital anomalies including spina bifida, spondylolisthesis, scoliosis, kyphosis, extra rib, fused rib and pigeon shaped chest.	Lecture	Anatomy Lecture hall - 1	Dr Rashid	▪ MCQs ▪ SEQs
<u>DEVELOPMENT OF RESPIRATORY SYSTEM & DEVELOPMENTAL ANOMALIES OF RESPIRATORY SYSTEM:</u> • Enumerate the different Parts of Respiratory System • Name the Different Parts of Foregut • Discuss the formation of laryngo- tracheal tube	Lecture	Anatomy Lecture hall - 1	Dr Rashid	▪ MCQs ▪ SEQs ▪ OSPE

• Discuss the formation of Lung Bud • Describe the Branches of Bronchi • Discuss the different Stages of development of Lung • Describe Maturation of Lung.				
DEVELOPMENT OF BODY CAVITIES: • Identify the intra embryonic mesoderm and its parts • State the division of lateral plate mesoderm into visceral and parietal layers enclosing intra embryonic caelome or body cavity • Recognize the cephalo-caudal and transverse foldings of embryonic disc • Describe the extent of intra embryonic coelom after folding and its divisions into three serous cavities • State the derivatives of visceral and parietal layers of mesoderm ׀ State the pericardio-peritoneal canals and their final fate • Explain the development of	Lecture	Anatomy Lecture hall - 1	Dr Rashid	▪ MCQs ▪ SEQs ▪ OSPE

diaphragm from various tissue sources • Clinically correlate to the main anomalies related to body cavities and diaphragm.				
HISTOLOGY **<u>RESPIRATORY EPITHELIUM:</u>** • Describe the structural details of respiratory system • Classify the types of epithelia lining the various parts of respiratory system • Differentiate between the histological differences among various parts of respiratory system • Recognize &Identify the individual structures in H& E and EM sections.	Lecture	Anatomy Lecture hall - 1	DrInayat	▪ MCQs ▪ SEQs
<u>LARYNX :</u> • Describe the different layers of larynx • Discuss the histological characteristics of each layer of larynx • Describe the histological	Lecture	Anatomy Lecture hall - 1	DrInayat	▪ MCQs ▪ SEQs ▪ OSPE

classification of laryngeal cartilage				
TRACHEA : • Describe the structure of trachea and its layer • Describe the different layers of trachea and their histological characteristics	Lecture	Anatomy Lecture hall - 1	DrInayat	▪ MCQs ▪ SEQs
RESPIRATORY EPITHELIUM, ALVEOLAR CAPILLARY MEMBRANE & GENERAL DESCRIPTION OF TISSUE ARRANGEMENT IN THE HOLLOW VISCERA (PRACTICAL): • Describe the microscopic anatomy of respiratory bronchiole. • Discuss the microscopic picture of alveolar ducts, alveolar sacs and alveoli. • Know the different types of cells found in respiratory tract like type 1 and type2 cells found in alveoli • Discuss surfactant,alveolar	Lecture	Anatomy Lecture hall - 1	Dr Fatima	▪ MCQs ▪ SEQs ▪ OSPE

septum, alveolar pores and alveolar macrophages • Describe blood-air barrier. • Discuss the clinical aspects related to the topic.				

DEPARTMENT OF PATHOLOGY

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC and Objectives	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
Respiratory disease syndrome • List respiratory disease • Explain the types of pneumonia • Lists of pathogens causing pneumonia • Expplain S/S and preventive measure	Lecture	Lecture hall 1	Dr. Sarah Azhar	Short EQs
Restrictive and obstructive lung diseases • Define restrictive and obstructive lung disease • Lists the causes of both	Lecture	Lecture hall 1	Dr. Imran Nazir	MCQs

• Explain the sign and symptoms				
Asthma • Define asthma • Briefly describe pathogenesis • Explain s/s of asthma	Lecture	Lecture hall 1	Dr. Ghazal Irfan	Short EQs
Pulmonary effusion • Define and list types of pulmonary effusion • Differentiate between different types • Explain s/s of each type	Lecture	Lecture hall 1	Dr. Roznia	MCQs

DEPARTMENT OF COMMUNITY MEDICINE

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC and Objectives	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
Introduction to Respiration • Define respiratory system • Enumerate the major discussion of respiratory system • Discuss the respiratory infectious	Lecture	Lecture hall 1	Prof. Dr. NaziaJameel	MCQ, SEQ, OSPE/Spotting, Viva

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Introduction to Respiration • Explain the clinical features of respiratory illness • Discuss the important aspects causing respiratory infections	Lecture	Lecture hall 1	Prof. Dr. NaziaJameel	MCQ, SEQ, OSPE/Spotting, Viva
Introduction to Respiration • Describe the main risk factors of respiratory infection and their mode of transmission • Describe the preventive & control strategy for respiratory infection	Lecture	Lecture hall 1	Prof. Dr. NaziaJameel	MCQ, SEQ, OSPE/Spotting, Viva
Introduction to Respiration Describe the preventive & control strategy for respiratory infection	Lecture	Lecture hall 1	Prof. Dr. NaziaJameel	MCQ, SEQ, OSPE/Spotting, Viva

DEPARTMENT OF SURGERY

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TOPIC AND OBJECTIVES	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
FLAIL CHEST: • Define flail chest • Enumerate the signs and symptoms of flail chest	Lecture	Anatomy Lecture hall 1	Dr. Sidra	MCQs, SEQs
PNEUMOTHORAX: • Define pneumothorax • Enlist the causes of pneumothorax • Describe the types of pneumothorax • Enumerate the signs and symptoms of pneumothorax	Lecture	Anatomy Lecture hall 1	Dr. Sidra	MCQs, SEQs
HAEMOTHORAX: • Define haemothorax • Enlist the causes of haemothorax • Enumerate the signs and symptoms of haemothorax	Lecture	Anatomy Lecture hall 1	Dr. Sidra	MCQs, SEQs

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MEDICINE

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC AND OBJECTIVES	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
ASTHMA: • Define asthma and discuss regarding etiologic and precipitating factors for the disease • Recite common signs and symptoms of patient presenting with asthma • Enlist investigation to diagnose asthma • Identify drugs for treatment of asthma • Describe use of nebulization machine and inhalers	Lecture Clinical rotation	Anatomy Lecture hall 1	Dr. Masooda	• MCQS • SEQS • Assignment • Structured Viva
CHRONIC OBSTRUCTIVE	Lecture	Anatomy lecture hall -1	Dr. Masooda	• MCQS • SEQS

LUNG DISORDER (COPD): • Define chronic obstructive lung disorders and identify its pathogenesis • Discuss clinical presentations of COPD patient • Review diagnosis and evaluation of patient suffering from COPD • Enlist the drugs used for treatment COPD				• Assignment • Structured Viva
PNEUMONIA: • Recalls the list of common viruses, parasites and bacteria causing pneumonia • Review the pathophysiology of pneumonia. • Identify common clinical presentation of patient suffering from pneumonia • Quote regarding radiological and hematological	Lecture	Anatomy lecture hall -1	Dr. Masooda	• MCQS • SEQS • Assignment • Structured Viva

diagnosis of pneumonia • Name the various drug groups of antibiotic to treat pneumonia				

FORENSIC MEDICINE

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC AND OBJECTIVES	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT

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ASPHYXIA: • Define Asphyxia with the mention of its Types. • Classify Asphyxial Deaths. • Describe Physiology, Biochemistry & Pathology of Fatal Asphyxia.	Lecture	Anatomy Lecture hall 1	Dr. Rafay A. Siddiqui	• MCQS • SEQS
DROWNING: • Express Types, Mechanism & Cause of Death, Pathophysiology & Diagnosis of Death in Drowning,with Circumstances of Drowning. • Differentiate between Antemortem & Postmortem Drowning, Fresh- Water & Salt – Water	Lecture	Anatomy lecture hall -1	Dr. Rafay A. Siddiqui	• MCQS • SEQS
CHOKING:			Dr. Rafay A. Siddiqui	• MCQS • SEQS

• Demonstrate Levels of Obstruction to Types of Mechanical Asphyxia • Discuss ML aspects of Smothering, Gagging, Choking, Traumatic Asphyxia, Burking, etc.	Lecture	Anatomy lecture hall -1		

RESEARCH

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC AND OBJECTIVES	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
CATEGORIES AND TYPES OF RESEARCH-I: • Explain the categories of research	Lecture	Anatomy Lecture hall 1	Dr. Nauman	Formative
CATEGORIES AND TYPES OF RESEARCH-II: • Define the types of research	Lecture	Anatomy lecture hall -1	Dr. Nauman	Formative

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DEPARTMENT OF ISLAMIAT

By the end of lecture/module, first professional MBBS student will be able to:

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Topic and Learning Objective	Teaching Strategy	Location	Facilitator	Assessment
Pillars of Islam: Declaration of Faith (Shahadah) Describe and explain the importance of Shahadah in the light of Quran and Hadith. Also mention individual and communal benefits.	Lecture	lecture hall 1, Ground Floor, Block A.	Madam Uzma	
Prayers (Salah) Describe and explain the importance of Salah in the light of the Quran and Hadith. Also mention individual and communal benefits.				
Fasting (Soum) Describe and explain the importance of Soum in the light of the Quran and Hadith. Also mention individual and communal benefits.				
Obligatory Charity (Zakat) Describe and explain the importance of Zakat in the light of the Quran and Hadith. Also mention individual and communal benefits. Mention the Recipients of Zakat.				
Pilgrimage (Hajj) Describe and explain the method of Hajj in the light of Quran and Hadith. Give and explain the types of Hajj.				

DEPARTMENT OF FAMILY MEDICINE

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By the end of lecture/module, first professional MBBS student will be able to:

TOPIC and Objectives	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
RESPIRATORY SYSTEM • Discuss common symptoms of respiratory tract. • Classify cough and discuss common causes of acute cough and chronic cough. • Discuss relevant history questions and red flags. • Identify different types of inhalers and peak flow meter. • Discuss role of family physician in management of respiratory conditions.	Lecture	Anatomy lecture hall	Dr. Junaid	MCQ

DEPARTMENT OF PHARMACOLOGY

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC and Objectives	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
RESPIRATORY SYSTEM • Classify and discuss common causes of Acute cough and Chronic cough.	Lecture	Anatomy lecture hall	Dr. Junaid	MCQ

• Discuss relevant history questions and red flags. • Identify different types of inhalers and peak flow meter.				

DEPARTMENT OF PEARLS

By the end of lecture/module, first professional MBBS student will be able to:

TOPIC and Objectives	TEACHING STRATEGY	LOCATION	FACILITATOR	ASSESSMENT
LECTURE 1 • Identify different study approaches.	Lecture	Anatomy lecture hall-1	Dr. Talal	Formative

• Discuss how to improve their study skills **LECTURE 2** • Identify different learning styles of learners. • Discuss importance of different learning styles. **LECTURE 3** • Develop a working plan for studying • Compare individual and group learning benefits **LECTURE 4** • Use study guide and Table of Specifications. • Identify different learning resources available for learning.			Dr. Saima Dr. Shams Dr. Tala	

CASE-BASED LEARNING (CBL)

By the end of lecture/module, first professional MBBS student will be able to:

1. List the passages through which air passes from the exterior to the alveoli, and describe the cells that line each of them.

2. List the major muscles involved in respiration and state the role of each at rest and exercise

3. Define lung compliance and airway resistance. List factors affecting compliance.

4. Compare the pulmonary and systemic circulations and list some major differences between them.

5. Describe basic lung defense and metabolic functions.

6. Define partial pressure and calculate the partial pressure of each of the important gases in the atmosphere at sea level.

7. Define hypoxia and describe differences in subtypes of hypoxia.

TIME TABLES FOLLOWED IN RESPIRATORY MODULE:

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WEEK 1

DATE / DAY	8:30-9:30	9:30-10:15	10:15-10:30	10:30-11:30	11:30-12:30	12:30-1:15	1:15-1:30	1:30-3:30
MONDAY 15-8-22	CVS MODULE EXAM		CVS MODULE EXAM					CVS MODULE EXAM
TUESDAY 16-8-22	ANATOMY Nose Nasalseptum & Lateral wall of Nose	PHYSIOLOGY Muscles of Respiration, Pressures in the lungs.		EMBRYO development of Nose and paranasal sinuses	COMMUNITY MEDICINE	ANATOMY Histology of Nose		PHYSIOLOGY Compliance of the lungs, Surfactant
Wednesday 17-8-22	ANATOMY Paranasal Sinus	ANATOMY Cartilage and ligaments of larynx		BIOCHEMISTRY Introduction to lipid	RESEARCH	PEARLS		ANATOMY Muscles of Larynx
Thursday 18-8-22		RADIOLOGY		ANATOMY Histology of	ISLAMIAT			ANATOMY

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OFF	**BIOCHEMISTRY** **Glycolipids**			**Larynx**		**SDL**	**LUNCH & PRAYER**	**Trachea**
Friday 19-8-22	**EMBRYO** **Development of larynx**	**SDL**		**ANATOMY** **Histology of Trachea**	**ENT**	**ANATOMY** **Blood & Nerve supply of larynx**		**BIOCHEMISTRY** Phospholipids

DAYS	**8:30-9:30**	**9:30-10:15**	**10:15-10:30**	**10:30-11:30**	**11:30-12:30**	**12:30-1:15**	**1:15-1:30**	**1:30-3:30**
MONDAY 22-8-22	**ANATOMY** Thoracic Apertures	**ANATOMY** Development of Trachea &bronchi		**PRACTICAL GROUPA,B &C** **Histology**oftrachea **Physiology** Vitalcapacity **Biochemistry:intro of** Spectrophotometry		BIOCHEM Fatty acid its classification		**ANATOMY** Pleura
TUESDAY 23-8-22	**PHYSIOLOGY** Pulmonary volumes & capacities, Alveolar ventilation & dead space	PAEDS	BREAK	**PRACTICALGROUPA,B &C** **Histology**oftrachea **Physiology** Vitalcapacity **Biochemistry: introduction of** Spectrophotometry		RESEARCH		**ANATOMY** Lungs

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WEDNESDAY 24-8-22	**OFF DUE TO RAIN EMERGENCY**			**OFF DUE TO RAIN EMERGENCY**				**OFF DUE TO RAIN EMERGENCY**
THURSDAY 25-8-22 ONLINE CLASSES	**9 – 10 30 am** **ANATOMY** **GROSS ANATOMY OF TRACHEA** **Dr TAYYABA**			**10 – 3- 12 pm PHYSIOLOGY**		**12- 1 30 pm BIOCHEMISTRY**		**OFF**
FRIDAY 26-8-22	**PHYSIOLOGY** Pulmonary circulation. 3 zones according to blood flow.			**BIOCHEMISTRY** Eicosanoids	**ISLAMIAT**	**MEDICINE**	**LUNCH & PRAYER**	**PHYSIOLOGY** Pulmonary capillary dynamics, pulmonary edema & pleural effusion.
SATURDAY 27-8-22	**BIOCHEMISTRY** Oxidation of even chain fatty acids 1(lipid metabolism)	**ANATOMY** **Sternum/ Costal cartilage**		**SURGERY**	**SDL**			**CBL**

WEEK 2

WEEK 3

DAYS	8:30-9:30	9:30-10:15	10:15-10:30	10:30-11:30	11:30-12:30	12:30-1:15	1:15-1:30	1:30-3:30

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MONDAY 29-8-22	**ANATOMY** **Ribs Thoracic vertebra & Joints of thorax**	**EMBRYO** Development of lungs		**PRACTICAL/skill lab GROUPA,B &C** **Histology** = lungs **Physiology:**respiratory sound (skill lab) **Biochemistry**:Estimationof Biochemicalparametersby spectrophotometry (skill lab)		**BIOCHEMISTRY** Energetics of beta oxidation of even chain fatty acids (lipid metabolism) Odd chain fatty acid oxidation		**PHYSIOLOGY** Principals of gas exchange, respiratory unit & membrane
TUESDAY 30-8-22	**PHYSIOLOGY** Ventilation perfusion ratio.	**ANATOMY** **Muscles of Larynx**		**PRACTICAL GROUPA,B &C** **Histology** of lungs **Physiology:** respiratory sound (skill lab) **Biochemistry**:Estimation of Biochemical parameters by spectrophotometry (skill lab)		**PHYSIOLOGY** **Transport of O2**		**PHYSIOLOGY** O2-Hb dissociation curve.
WEDNESDAY 31-8-22	**BIOCHEMISTRY** Biological Oxidation-1	**PEARLS**	BREAK	**PRACTICAL GROUPA,B &C** **Histology** of lungs **Physiology:**respiratory sound (skill lab) **Biochemistry**:Estimation of Biochemical parameters by spectrophotometry (skill lab)		**F.MEDICINE**	BREAK	**PHYSIOLOGY** Metabolic use of O2 by cells & O2 toxicity.
THURSDAY 1-9-22	**PHYSIOLOGY** CO2 transport, CO-Poisoning and treatment.	**BIOCHEM** . Biological Oxidation-2		**EMBRYOLOGY** **CONGENITAL ANAMOLIES**	**BIOCHEMISTRY** . Biological Oxidation-3	PHARMACOLOGY		**PATHOLOGY**
FRIDAY 2-9-22	**BIOCHEMISTRY** Introduction of acid base balance	**MEDICINE**		**ENT**	SDL			CBL

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WEEK 4

DAYS	8:30-9:30	9:30-10:15	10:15 - 10:30	10:30-11:30	11:30-12:30	12:30-1:15	1:15-1:30	1:30-3:30
MONDAY 5-9-22	**BIOCHEMISTR** Buffers	**PHYSIOLOGY** **Nervous regulation of respiration .**		**PRACTICAL/SKILL LAB** **GROUP A, B & C** **Histology of lungs** **Physiology pulse oximeter(skill lab)** **Biochemistry: Estimation of Biochemical parameters by spectrophotometer (skill lab)**		**PSYCHIT**		**PHYSIOLOGY** Regulation of respiration during exercise
TUESDAY 6-9-22	**BIOCHEMISTRY** Role of respiration in acid-base balance	**PEARLS**		**PRACTICAL/skill lab** **GROUP A, B & C** **Histology of lungs** **Physiology pulse oximeter(skill lab)** **Biochemistry: Estimation of Biochemical parameters by spectrophotometer(skill lab)**		**SDL**		**CBL**
WEDNESDAY 7-9-22	**ORTHO**	**Emergency medicine**		**PRACTICAL/skill lab** **GROUP A, B & C** **Histology of lungs** **Physiology pulse oximeter(skill lab)** **Biochemistry: Estimation of Biochemicalparameters spectrophotometer (skill lab)**		**PATHO**		**PHYSIO QUIZ**

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THURSDAY 8-9-22	**COMMUNITYMEDICINE**	**MEDICINE**		**SURGERY**	**BIOETHICS**	**SDL**		**ANATOMY** THORACIC SYMPATHIC TRUNK
FRIDAY 9-9-22	**FORENSIC MEDICINE**	**PHARMACOLOGY**		**ANATOMY** **Hemi azygous vein/** **Accessory vein**		**INFECTION CONTROL**		AnatomyLRC **Bones of thorax**

WEEK 5

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DAYS	8:30-9:30	9:30-10:15	10:15-10:30	10:30-11:30	11:30-12:30	12:30-1:15	1:15-1:30	1:30-3:30
MONDAY 12-9-22	**MEDICINE**	**PATHOLOGY**		**PRACTICAL GROUPA&B Histology of lungs Physiology Stethography BIO: Group discussion**		**SDL**		**COMMUNITY MEDICINE**
TUESDAY 13-9-22	**PHYSIOLOGY** study of blood gases & blood pH.			**PRACTICAL GROUPA&B Histology of lungs Physiology Stethography BIO: Group discussion**		**ANATOMY** Histology of trachea		**PHYSIOLOGY** Measurement of maximum expiratory flow, Hypercapnia.
WEDNESDAY 14-9-22	**PATHOLOGY**	**COMMUNITY MEDICINE**		**PRACTICAL GROUPA&B Histologyoflungs PhysiologyStethography BIO:Group discussion**		**PHYSIOLOGY Hypoxia & O2 therapy, cyanosis.**		**BEHAVIORAL SCIENCE**
THURSDAY 15-9-22	**BIO CHEM F.ASSESMENT**	**FORENSIC MEDICINE**		**MEDICINE**	**HISTOLOGY** Histology of lungs	**PHYSIOLOGY** Artificial respiration.		**ANATOMY** LRC **DR JAVERIA MODELS**
FRIDAY 16-9-22	**SURGERY**	**PEARLS**		**ANATOMY PRESENTATION**	**SDL**			**CBL**

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REFERENCE BOOKS AND OTHER READING RESOURCES:

Gross Anatomy	BD Chaurasia's **Handbook of GENERAL ANATOMY** **Netter Atlas of Human Anatomy**
Embryology	**Langman's Embryology**
Histology	**Laiq Hussain Histology**
Physiology	**Guyton and Hall**. Textbook of Medical Physiology, 13th Edition. **Ganong's** Review of Medical Physiology, 24th Edition.
Pathology	Robin`s Basic Pathology-10th Edition
Pharmacology	**Essential** • **Bertram G. Katzung.** Basic and Clinical Pharmacology, 14th Edition. 2017. • **Katzung and Trevor's pharmacology** Examination and Board Review 11th Edition 2015. **Recommended** • **Lippincott's illustrated review of Pharmacology**. 6th Edition. 2015.
Islamiat	• Hameed ullah Muhammad, "Emergence of Islam" , IRI, Islamabad, "Muslim Conduct of State" and "Introduction to Islam". • Hussain Hamid Hassan, "An Introduction to the Study of Islamic Law" leaf Publication Islamabad, Pakistan. • Abdul Qayyum Natiq, "Sirat-E-Mustaqim. • Farkhanda Noor Muhammad, "Islamiat". • Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001).

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ASSESSMENT METHODS:

THEORY:

❖ **Essay Questions- Short Essay Questions (SEQs)** are used to assess objectives covered in each module.

- 6 SEQs are given (no choice).
- Time duration 90 minutes.
- Students write their answer in an answer sheet.

❖ **Best Choice Questions (BCQs)** also known as MCQs (Multiple Choice Questions) are used to assess objectives covered in each module.

- A BCQ has a statement or clinical scenario followed by four options (likely answer).
- Students after reading the statement/scenario select ONE, the most appropriate response from the given list of options.
- Correct answer carries one mark, and incorrect 'zero mark'. There is no negative marking.
- Students mark their responses on specified computer-based/OMR sheet designed for BMC, BMU.

❖ **OSPE/OSCE: Objective Structured Practical/Clinical Examination:**

- Each student will be assessed on the same content and have same time to complete the task.
- Comprise of 12-25 stations.
- Each station may assess a variety of clinical tasks; these tasks may include history taking, physical examination, skills and application of skills and knowledge.
- Stations are observed, unobserved, interactive and rest stations.
- Observed and interactive stations will be assessed by internal or external examiners.
- Unobserved will be static stations in which there may be an X-ray, Labs reports, pictures, clinical scenarios with related questions for students to answer.
- Rest station is a station where there is no task given and in this time student can organize his/her thoughts.

INTERNAL EVALUATION:

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- Students will be assessed to determine achievement of module objectives through the following: o **Module Examination:** will be scheduled on completion of each module. The method of examination comprises theory exam which includes BCQs and OSPE (Objective Structured Practical Examination).

- **Graded Assessment of students by Individual Department**: Quiz, viva, practical, assignment, small group activities such as CBL, online assessment, ward activities, examination, and Practical journals.
- Marks of both modular examination and graded assessment will constitute 20% weightage which will be added to Annual Examination.

FORMATIVE ASSESSMENT:

- Individual department may hold quiz or short answer questions to help students assess their own learning.
- The marks obtained are not included in the internal evaluation.