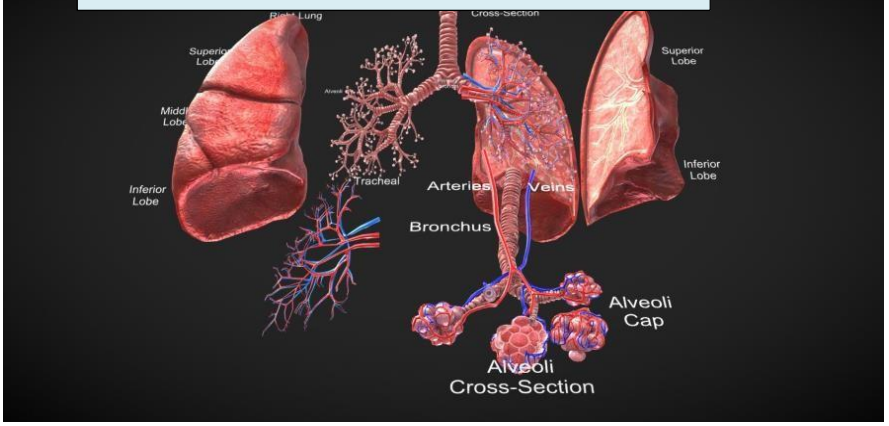
RAI FOUNDATION MEDICAL COLLEGE

RESPIRATORY - I MODULE

FIRST YEAR MBBS, ACADEMIC SESSION 2024-25

BLOCK: III(Respiratory- I)
Academic Year: 2025
Duration: 4 Weeks



DISCLAIMER

- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- It is to declare that the learning objectives (general and specific) and the distribution of assessment tools (both theory and practical) are obtained from Rai Foundation Medical College, Sargodha. These can be obtained from: https://www.uhs.edu.pk/
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via module coordinator.

Vision Statement

To be an institution of excellence in medical education, research, and patient care, fostering innovation, compassion, and a profound commitment to addressing healthcare challenges at local and global levels.

Mission Statement

We are dedicated to producing competent, ethical medical graduates who exemplify empathy, social accountability, and excellence in patient care. Through innovative education and critical thinking, they will advance clinical practice, scientific research, and lifelong learning to meet local and global healthcare needs.

Table of Contents

Module Committee

Sr.no	Name	Department	Role
1.		Principal	
2.		DME	Director
3.		DME	Assistant Director
4.		DME	Senior Demonstrator
Module Team			
5.		HOD Biochemistry	Block Coordinator
6.		Asst. Prof. Physiology	Module Coordinator
7.		Asst Professor DME	Module Developer
8.		Senior Demonstrator	Module Developer
9.		Asso. Prof. Anatomy	Member
10.		HOD Physiology	Member
11.		HOD Anatomy	Member
12.		Professor Physiology	Member
13.		Senior Demonstrator Pathology	Member
14.		Professor Medicine	Member
15.		Professor Surgery	Member
16.		Asso.Prof. Pharmacology	Member
17.		Senior Lecturer Community Medicine	Member
18.		Asst. Prof. Psychiatry (Behavioral Science)	Member

Introduction to Study Guide

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The Study Guide:

— Communicates information on organization and management of the module.
— This will help the student to contact the right person in case of any difficulty.
— Defines the objectives which are expected to be achieved at the end of the module.
— Identifies the learning strategies such as lectures, small group teachings.

Module Outcomes:

— Provides a list of learning resources such as books, computer-assisted learning programs, web links, and journals, for students to consult in order to maximize their learning.
— Highlights information on the contribution of continuous on the student's overall performance.
— Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of Objectives:

- Focuses on information pertaining to examination policy, rules and regulations.

Students will experience an integrated curriculum.

Integrated Curriculum:

An integrated curriculum is all about making connections, whether to real life or across the disciplines, about skills or about knowledge. An integrated curriculum fuses subject areas, experiences, and real-life knowledge together to make a more fulfilling and tangible learning environment for students. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basic sciences when they repeatedly learn in relation to clinical examples. Case based discussions, computer-based assignments, early exposure to clinics, wards, and skills acquisition in skills lab are characteristics of integrated teaching program.

Marks Distribution

BLOCK III– Respiratory- 1 Module					
Theory	Part I - MCQs	85 Marks	**Practical**	OSPE	56 Marks
				OSCE	16 Marks
	Part II- SEQs	35 Marks		OSVE	48 Marks
	Internal Assessment	30 Marks		Internal Assessment	30 Marks
	Total	150 Marks		Total	150 Marks

Theme	Subject	MCQ (1 Mark)	SEQ (5Mark each)	Marks	Oral / Practical / Clinical Exam			
					OSPE (08 Marks each)	OSCE (10 Marks each)	Structured OSVE (16 Marks each)	Marks
Normal Structure	Anatomy & Applied / Clinical	16	2	26	1	-	1	**24**
Normal Function	Physiology & Applied / Clinical	31	4	51	4	-	1	**48**
	Biochemistry & Applied / Clinical	18	1	23	2	-	1	**32**
Disease Burden & Prevention	Community Medicine Public Health	06	-	06	-	-	-	**-**
	Behavioral Sciences	02	-	02	-	-	-	**-**
Pathophysiology & Pharmaco-therapeutics	Pathology	07	-	07	-	-	-	**-**
	Pharmacology	05	-	05	-	-	-	**-**
CFRC	CFRC 1-1	-	-	-	-	1	-	**08**
PERLS	PERLS 1-1	-	-	-	-	1	-	**08**
		85	**7×5 = 35**	**120**	**08×7 = 56**	**2×08 = 16**	**3 × 16= 48**	**120**

Organization of Module

INTRODUCTION

The diseases related to the respiratory system are on the rise not only in developing countries but also in developed countries. The infant mortality rate in Pakistan is highest in Southeast Asia and one of the important reasons is common respiratory infections in children. With the world suffering from COVID-19 not only physically but also mentally, it is very important for medical students to study in detail the structures, functions, prevention, epidemiology, genetic basis of diseases and their management.

The respiratory system is responsible for bringing oxygen into the body and removing carbondioxide. It is made up of several organs and structures, including the nose, pharynx, larynx, trachea, bronchi, lungs, and diaphragm.

This study guide has been developed to help guide you and keep you focused on the objectives for this module.

Welcome to the field of medicine and hope that the journey ahead will be exciting and fulfilling for you all!!

Teaching and learning strategies:

The following teaching / learning methods are used to promote better understanding:

1. Interactive Lectures
2. Hospital / Clinic visits
3. Small Group Discussion
4. Practical
5. Skills session in skill labs
6. Case-Based Learning (tutorials)
7. Directed Self-Learning

- **Interactive lectures:**
  An interactive lecture is an easy way for instructors to intellectually engage and involve students as active participants in a lecture - based class of any size.

- **Hospital / Clinic visits:**
  In small groups, students observe patients with signs and symptoms in hospital or clinical settings. This helps students to relate knowledge of basic and clinical sciences of the relevant module.

- **Small group discussion (SGD):**
  Students learn from each other. Everyone gets more practice at expressing their ideas. A two-way discussion is almost always more creative than individual thoughts. Social skills are practiced in a 'safe' environment e.g. tolerance, cooperation.

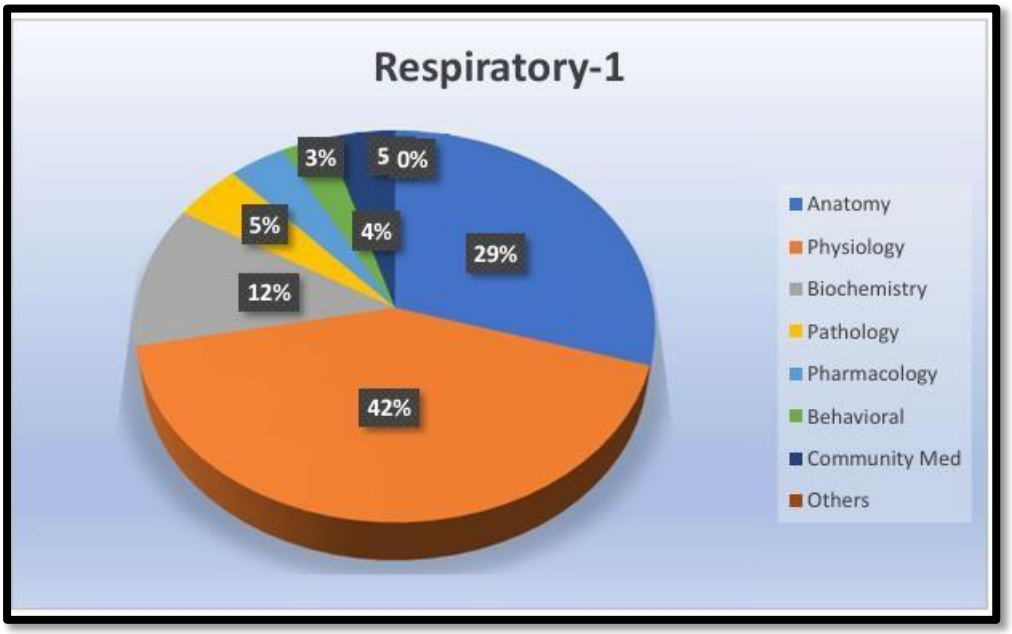
- **Skills session:**
  Skills relevant to respective module are observed and practiced where applicable in skills laboratory or Laboratories of various departments.

- **Case Based Learning (CBL):**

A small group discussion format where learning is focused on a series of questions based on a clinical scenario. Students discuss and answer the questions by applying relevant knowledge gained previously in clinical and basic health sciences during the module and construct new knowledge. The CBD will be provided by the concerned department. It is an active learning & teaching strategy which promotes application of foundational knowledge in relevant clinical scenarios.

- **Directed Self-learning (DSL):**
  Directed Self-learning, which involves studying with indirect supervision in a classroom/Library, is a valuable way to learn and is quickly growing in popularity among parents and students.
  Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Centre, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

Integrating Disciplines of Respiratory I Module



Module Outcomes

By the end of this module, students of 1st year MBBS will be able to

- Describe the normal anatomy of mediastinal structures including development, topographical anatomy, neurovascular supply, and histology.
- Discuss normal physiology of human respiratory system.
- Apply basic sciences` knowledge to understand the causes of common respiratory problems.
- Explain the pathogenesis of respiratory diseases.
- Enlist the main investigations relevant to respiratory disorders.
- Recognize risk factors and preventive measures of main respiratory diseases.

Themes Respiration- I Module

S. No	Theme	Duration
1.	Cough	1 week
2.	Gaseous Exchange	1 week
3.	Control of Respiration	1 week
4.	Respiratory Diseases	1 week

Specific Learning Objectives

ANATOMY				
GROSS ANATOMY				
Topic	**Specific Learning objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Upper Respiratory Tract	Describe the anatomical features and neurovascular supply of nasal cavity.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Describe the anatomical features and neurovascular supply of pharynx Human Anatomy Describe the anatomical features and neurovascular supply of larynx		C2	
	Describe the anatomical features and neurovascular supply of larynx.		C2	
Trachea	Describe the anatomical features of the Trachea with its extent, relations, neurovascular supply and lymphatics.		C2	
Thoracic Cavity	Give the boundaries of thoracic cavity, superior and inferior thoracic apertures.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	List the structures contained/ traversing them.		C2	
	Describe the anatomical correlates of Thoracic outlet syndrome.		C2	
Ribs	Identify and differentiate the typical from atypical ribs.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Describe the anatomical features of ribs		C2	
	Describe the anatomical correlates of supernumerary cervical rib.		C2	
	Classify the articulations of the ribs		C2	
	Describe the anatomical features of these articulations.		C2	
	Describe the movements with the muscles producing articulations.		C2	
	Describe the effects of fracture to the neck of rib and give its anatomical justification		C2	
	Describe the anatomical correlates of Flail Chest.		C2	
Intercostal Muscles	Describe the anatomical correlates of Thoracotomy.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Define the attachments, relations, nerve supply and actions of intercostal muscles.		C2	
	Discuss details of the contents of intercostal space.		C2	
Thoracic Vertebrae	Describe the anatomical features of typical & atypical thoracic vertebrae.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Differentiate between typical and atypical vertebrae.		C2	
	Explain the thoracic part of the vertebral column (normal curvature, intervertebral joints & fascia of the back, blood supply, lymphatic drainage, nerve supply of back).		C2	
	Apply knowledge of anatomy to describe		C2	

	the clinical correlates such as -Kyphosis, Scoliosis.			
Sternum	Describe the bony features of the sternum.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Describe the anatomical correlates of sternal biopsy and sternotomy.		C2	
	Describe the presentation of sternal fractures and correlate it anatomically.		C2	
Connective tissue of Thorax	Define endo thoracic fascia.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Describe the supra-pleural membrane with its attachments.		C2	
Neurovascular supply of Thorax	Describe the origin, course, relations and distribution of intercostal nerves and vessels.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Describe the alternate routes of venous drainage in blockage of superior/ inferior vena cava.		C2	
Cutaneous nerve supply of Thorax	Describe the cutaneous nerve supply and dermatomes of thorax.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Give anatomical justification of the manifestations of herpes zoster infection on thoracic wall.		C2	
	Discuss anatomical correlates of intercostal nerve block.		C2	
Diaphragm	Name the parts of diaphragm mentioning their attachments and neurovascular supply	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Explain the role of diaphragm in respiration.		C2	
	Enumerate the diaphragmatic apertures with their vertebral levels.		C2	
	Mention the structures traversing the diaphragmatic aperture.		C2	
Pleural cavity	Describe the pleura giving its parts, layers, neurovascular supply, and lymphatic drainage.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Describe the pleural cavity giving its recesses and the lines of pleural reflection.		C2	
	Describe the anatomical correlates of pleural pain pleurisy, pneumothorax, pleural effusion.		C2	
	Describe the anatomical features, relations of lungs.		C2	
Lungs	Describe the neurovascular supply and lymphatic drainage of lungs.	SGD (Dissection Hall & Museum)	C2	MCQs, SEQs, OSVE, OSPE
	Compare and contrast the anatomical features and relations of right and left lung.		C2	
	Describe the root of the lung and pulmonary ligament with arrangement of structures at the hilum.		C2	
	Define Bronchopulmonary segments.		C2	
	Give their vascular supply, lymphatic drainage and clinical significance.		C2	
	Describe the anatomical correlates of chest tube intubation.		C2	
	Describe the anatomical correlates of		C2	

	thoracentesis.			
	Describe the anatomical correlates of bronchoscopy.			
	Describe the anatomical basis for medicolegal significance of lungs		C2	
	Identify various anatomical landmarks on chest X-Rays, CT and MRI		C2	
EMBRYOLOGY & POST- NATAL DEVELOPMENT				
Topic	**Specific Learning objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Development of thoracic Cavity	Describe the development of ribs, sternum, and thoracic vertebrae.	LGIS	C2	MCQs, SEQs, OSVE, OSPE
	Describe the associated congenital malformations.		C2	
	Describe the development of Thoracic cavities (Pleural and Pericardial cavities)			
Diaphragm	List the embryological sources of the diaphragm.	LGIS	C1	
	Describe the events taking place in the development.		C2	
Upper Respiratory Tract	Describe the development of upper respiratory tract: larynx and trachea	LGIS	C2	MCQs, SEQs, OSVE, OSPE
	Describe congenital anomalies of Trachea Tracheoesophageal fistulas of different types		C2	
Lungs	List the phases of lung development with their time periods.	LGIS	C1	MCQs, SEQs, OSVE, OSPE
	Describe the events taking place in each phase		C2	
	Describe the embryological basis of respiratory distress syndrome/ hyaline membrane disease, ectopic Lung lobes, congenital cysts of Lung.		C2	
MICROSCOPIC ANATOMY (HISTOLOGY)				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Organization of respiratory system	Describe general histological organization of respiratory system.	LGIS	C2	MCQs, SEQs, OSVE
Respiratory epithelium	Describe the microscopic features respiratory epithelium & Olfactory epithelium.	LGIS	C2	
Nasopharynx	Describe histology of Nasopharynx.	LGIS	C2	
Epiglottis & larynx	Describe the histological features	LGIS	C2	
MICROSCOPIC ANATOMY (HISTOLOGY) PRACTICAL				

Topic	Specific Learning Objectives	Teaching strategy	Levels C/P/A	Assessment
Epiglottis & Larynx	Identify the histologic sections of epiglottis and larynx.	Practical	C2 / P	Integrated OSPE
	Draw a labelled diagram of the histologic sections of epiglottis and larynx.		C2	

Organization of Respiratory System	Describe the histological features of bronchial tree: trachea, bronchi, bronchioles, alveoli	Practical	C2	
	Identify, histological sections of bronchial tree: trachea, bronchi, bronchioles, alveoli, lung.	Practical	C2 / P	
	Draw a labelled diagram of the histological sections of bronchial tree: trachea, bronchi, bronchioles, alveoli, Lung.		C2	
Bronchial tree & Lung	Describe the mucosal changes encountered in the trachea-bronchial tree.	Practical	C2	
	Compare and contrast the histological features of various components of bronchial tree: trachea, bronchi, bronchioles, alveoli.		C2	
Pneumocytes	Compare and contrast the light and electron microscopic features of type I and type II pneumocytes.	Practical	C2	

PHYSIOLOGY				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Breathing	Enlist the muscles of inspiration and expiration in quiet breathing	LGIS	C1	MCQs, SEQs, OSVE, OSPE
	Enlist the muscles of inspiration and expiration in labored breathing		C2	
	Explain the components of the work of breathing		C3	
	Discuss the mechanics of pulmonary ventilation		C2	
	Explain periodic breathing		C2	
	Explain the causes and pathophysiology of sleep apnea.		C2	
Lung Compliance	Define lung compliance.	LGIS	C1	
	Explain lung compliance.		C2	
	Enlist the factors that affect lung compliance.		C2	
	Draw the compliance diagram of air filled and saline filled lungs.		C2	
	Enlist the components of surfactant.		C1	
	Describe the role of surfactant in lung compliance.		C2	
	Explain the role of surfactant in premature babies.		C2	
Lung Volumes & Capacities	Define the different lung volumes and capacities and their clinical significance,	LGIS/ SGD	C1	MCQs, SEQs, OSVE, OSPE
	Discuss Forced Expiratory Volume 1/ Forced Vital Capacity (FEV1/FVC) ratio and its clinical significance		C2	
	Enlist the lung volumes and capacities that cannot be measured by spirometer.		C1	
	Define dead space & explain its types		C1	

	Discuss FEV1/FVC ratio in relation to Bronchial Asthma.		C2	
	Discuss FEV1/FVC ratio in relation to Chronic Obstructive Pulmonary disease /restrictive lung diseases.		C2	
	Discuss FEV1/FVC ratio in relation to in relation to pulmonary embolism.		C2	
Pulmonary Ventilation	Define alveolar ventilation.	LGIS/ SGD	C1	
	Define minute respiratory volume		C1	
	Describe the pressures in the pulmonary system.		C2	
Pulmonary Circulation	Describe the blood volume of the Lungs	LGIS/ SGD	C2	MCQs, SEQs, OSVE,OSPE
	Describe the distribution and regulation of blood flow through the lungs.		C2	
	Describe the mechanics of blood flow in the three blood flow zones of the lung		C2	
	Describe the effect of heavy exercise on pulmonary arterial pressure.		C2	
	Describe the function of pulmonary circulation when left atrial pressure rises as a result of left-sided heart failure.		C2	
	Explain pulmonary capillary dynamics.		C2	
Pulmonary Edema & Pleural Effusion	Discuss pathophysiology and common causes of pulmonary edema	LGIS/ SGD	C2	MCQs, SEQs, OSVE,OSPE
	Explain the safety factors that prevent pulmonary edema.		C2	
	Explain the physiological basis of the presence of fluid normally in the pleural cavity.		C2	
	Define pleural effusion with its causes.		C1	
Principles of Gaseous Exchange	Explain the ultrastructure of respiratory membrane	LGIS/ SGD	C1	MCQs, SEQs, OSVE, OSPE
	Discuss the factors affecting diffusion of gases across the respiratory membrane		C1	
	Explain the diffusion capacity of respiratory membrane for oxygen and carbon dioxide		C2	
	Define alveolar, pleural and trans-pulmonary pressure.		C1	
	Explain differences in the partial pressures of atmospheric, humidified, alveolar air.		C2	
	Explain physiological basis of change in each pressure.		C2	
Transport of oxygen in blood	Explain the different forms of transport of oxygen in the blood.		C2	
Oxyhemoglob in dissociation curve Bohr`s effect Cyanosis	Explain oxyhemoglobin dissociation curve with the help of a diagram.	LGIS/ SGD	C2	MCQs, SEQs, OSVE
	Enlist the factors that cause the rightward shift of oxyhemoglobin dissociation curve		C1	
	Enlist the factors that cause the leftward		C1	

	shift of oxyhemoglobin dissociation curve			
	Explain the Bohr`s effect		C2	
	Define cyanosis along with enlisting its types and causes.		C1	
Transport of CO2 in blood	Enlist different forms in which Carbon dioxide CO2 is transported in the blood	LGIS/ SGD	C1	MCQs, SEQs, OSVE, OSPE
	Explain carboxyhemoglobin dissociation curve		C2	
	Explain the Haldane effect		C2	
	Explain the chloride shift/Hamburger phenomenon		C2	
	Define the respiratory exchange ratio (RER)		C1	
VA/Q (ventilation perfusion ratio)	Explain the alveolar oxygen and carbon dioxide pressure when Pulmonary ventilation (V) and Perfusion (Q), VA/Q= infinity, zero, and normal	LGIS	C2	MCQs, SEQs, OSVE
	Explain the concept of physiological shunt when VA/Q ratio is above normal		C2	
	Explain the concept of physiological dead space when VA/Q ratio is above normal		C2	
Protective Reflexes	Enlist the respiratory and non-respiratory functions of the lung	LGIS	C2	MCQs, SEQs, OSVE
	Explain the nervous control of bronchiolar musculature		C2	
	Trace the reflex arc of cough reflex and sneeze reflex		C2	
Mountain Sickness	Explain the principle means by which acclimatization occurs	LGIS	C2	MCQs, SEQs, OSVE
	Explain the events that occur during acute mountain sickness		C2	
	Enlist the features of chronic mountain sickness		C1	
Deep Sea Diving	Explain the pathophysiology, features, prevention and treatment of decompression sickness.	LGIS	C2	
Carbon monoxide poisoning	Explain the effect of CO poisoning on oxyhemoglobin dissociation curve with a diagram.	LGIS	C2	MCQs, SEQs, OSVE
	Explain the pathophysiology, features, and treatment of CO poisoning.		C2	
Nervous regulation of respiration	Enumerate the components of respiratory centers and explain their functions.	LGIS	C1	MCQs, SEQs, OSVE
	Explain the inspiratory RAMP signal		C2	
	Explain the Herring Breuer reflex/lung inflation reflex and its clinical significance		C2	
Chemical control of respiration	Explain the location of chemo sensitive area (central chemoreceptors) and peripheral chemoreceptors	LGIS	C2	MCQs, SEQs, OSVE
	Explain the effect of hydrogen ions & carbon dioxide on the chemo- sensitive		C2	

	area			
	Explain the role of oxygen in the control of respiration / peripheral chemoreceptors.		C2	
Exercise	Explain the regulation of Respiration during Exercise.	LGIS	C2	MCQs, SEQs, OSVE
Hypoxia	Enlist the effects of acute hypoxia.	LGIS	C1	MCQs, SEQs, OSVE
	Explain the hypoxia inducible factor a master switch for body response to hypoxia.		C2	
	Explain different types of hypoxias.		C2	
Tuberculosis	Explain the pathophysiology of Tuberculosis.	LGIS	C2	MCQs, SEQs, OSVE
Pneumonia	Describe the pathophysiology of Pneumonia.	LGIS	C2	
Dyspnea	Define Dyspnea.	LGIS	C1	MCQs, SEQs, OSVE
	Enlist different causes of dyspnea.			
	Differentiate between cardiac and respiratory dyspnea.		C2	
	Outline management strategies for dyspnea.		C1/C2	
Pneumothorax	Enlist the causes of Pneumothorax.	LGIS	C1	MCQs, SEQs, OSVE
	Describe the signs and symptoms of Pneumothorax.		C2	
Pleuritis	Enlist the causes of Pleuritis	LGIS	C1	MCQs, SEQs, OSVE
	Describe the signs and symptoms of Pleuritis		C2	
	Discuss the management of Pleuritis		C2	
Bronchitis	Enlist the causes of Bronchitis	LGIS	C1	MCQs, SEQs, OSVE
	Discuss the signs and symptoms of Bronchitis		C2	
	Discuss the management of Bronchitis		C2	
Pneumonia	Classify different types of pneumonia	LGIS	C2	MCQs, SEQs, OSVE
	Discuss the sign symptoms of pneumonia		C2	
	Discuss the management of pneumonia		C2	
Asthma	Classify different types of asthma	LGIS	C2	MCQs, SEQs, OSVE
	Discuss the signs and symptoms of asthma		C2	
	Discuss the management of asthma		C2	
Tuberculosis	Classify different types of Tuberculosis.	LGIS	C2	MCQs, SEQs, OSVE
	Discuss the signs and symptoms of tuberculosis.		C2	
	Discuss the management of Tuberculosis.		C2	
Acute respiratory distress syndrome	Classify different types of acute respiratory distress syndrome	LGIS	C2	MCQs, SEQs, OSVE
	Discuss the signs and symptoms of acute respiratory distress syndrome		C2	
	Discuss the management of acute respiratory distress syndrome		C2	

Acute Respiratory Failure	Define respiratory failure	LGIS	C1	MCQs, SEQs, OSVE
	Describe various types of respiratory failure		C2	
	Enlist various causes of respiratory		C1	

	failure			
	Outline management strategies of respiratory failure		C2	
First Aid in Surgical Patient	Describe ABC in a trauma patient.	LGIS	C2	MCQs, SEQs, OSVE

PRACTICAL				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Respiratory Examination	Perform the clinical examination of chest for the respiratory system (inspection, palpation, percussion, Auscultation)	Lab	C2 / P2	OSPE, OSCE
Lung Volumes	Determine lung volumes and capacities with spirometer		C2 / P2	
Oxygen Saturation	Determine Blood Oxygen Saturation with finger Pulse Oximeter.		C2 /P2	
CPR	Perform Cardio pulmonary Resuscitation (CPR) on adult and infant.		C2/P2	

BIOCHEMISTRY				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Genetic Defects	Explain and interpret the pedigree of single gene defect i.e., Emphysema and cystic fibrosis (autosomal recessive).	LGIS / SGD	C2	MCQs, SEQs, OSVE
Respiratory Diseases	Describe the biochemical basis of emphysema, Chronic obstructive pulmonary disease (COPD) and cystic fibrosis.	LGIS / SGD	C2	MCQs, SEQs, OSVE
	Interpret Respiratory Distress syndrome on the basis of given data		C4	
Acid Base Balance	Discuss the concept of acid base balance.	LGIS / SGD	C2	MCQs, SEQs, OSVE
	Interpret metabolic and respiratory disorders of acid base balance on the basis of sign, symptoms and ABG findings.		C4	
	Describe the Clinical interpretation of acid base balance.		C2	

PRACTICAL BIOCHEMISTRY				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
PH Determination	Determine the pH of the solution by pH meter.	Practical Lab	C2 / P	OSPE / OSVE

Community Medicine				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Prevention of acute Respiratory Infections (ARI)	Identify the common risk factors of acute respiratory infections with emphasis on smoking.	LGIS	C1	MCQs
	Discuss preventive strategies of different problems related to respiratory system.		C2	
	Enlist the common vaccines used for the prevention of ARI.		C1	
Role of Vitamins in respiratory infection	Explain the role of vitamins in the respiratory tract infections.	LGIS	C2	
Interaction of environment & Respiratory System	Explain the effect of air pollutants on the respiratory system.	LGIS	C2	
	Describe the burden of respiratory diseases.		C2	
Occupational Lung Diseases	Enlist the common respiratory diseases related to occupation.	LGIS	C1	

BEHAVIORAL SCIENCE				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Personal, Psychosocial and vocational issues	Identify the psychosocial factors leading to psychogenic cough.	LGIS	C2	MCQs
	Identify strategies to deal with the various psychosocial aspects of Respiratory conditions (such as Asthma, COPD, Tuberculosis, Cystic Fibrosis, Sleep Apnea) on Individual, Family and Society.		C2	

AGING				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Respiratory infections in old age	Discuss the biochemical basis of respiratory infections in old age in cold weather.	LGIS	C2	MCQs
Vulnerability to infection & neoplasia	Discuss the role of age on respiratory clearance leading to recurrent inflammatory processes at the ciliated respiratory epithelium.	LGIS	C2	
Respiratory Diseases	Describe the biochemical basis of emphysema, COPD and cystic fibrosis.	LGIS	C2	

PHARMACOLOGY				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Cough Suppressants	Identify the drugs for cough suppression & expectoration.	LGIS	C2	MCQs
	Explain the mechanism of action and adverse effects of cough suppressants.		C2	
Antihistamines	Explain the mechanism of action and adverse effects of anti-histamines.	LGIS	C2	
Antiasthmatics	Explain the mechanism of action and adverse effects of anti-asthmatics.	LGIS	C2	

PATHOLOGY				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
ARDS	Describe the pathophysiology of acute respiratory distress syndrome.	LGIS	C2	MCQs
Obstructive Disease	Describe the pathophysiology of obstructive lung disease.	LGIS	C2	
Restrictive Disease	Describe the pathophysiology of Restrictive Lung Disease.	LGIS	C2	

CLINICAL SKILLS (CSIM)				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
CPR	Performance of chest compressions.	Skill Lab	C2 / P	OSCE
Clubbing	Check for clubbing of fingers.		C2 / P	
Chest X Ray	Identify main organs of the thorax on CXR.		C2 / P	
	Identification of pneumonic patch on chest x ray.		C2 / P	
Inhaler Use	Demonstrate steps of administering inhaler to a patient.		C2 / P	

PERLS (PROFESSIONALISM, ETHICS, RESEARCH, LEADERSHIP SKILLS)				
Topic	**Specific Learning Objectives**	**Teaching strategy**	**Levels C/P/A**	**Assessment**
Self-Directed Learner	Identify ways to seek help as and when required to achieve the set goals.	Assignment	C2	OSCE
	Write a narrative of seeking help from a knowledgeable other in personal or professional life.		C3	

Time Tables:

The timetables for the module will be shared via WhatsApp groups and the notice boards in advance.

Assessment Tools

Theoretical knowledge is tested by a written examination system constituted by multiple choice questions (MCQ) and SEQs. The assessment of practical knowledge involves oral, spot, or objective structured practical examinations (OSPE).

Multiple Choice Questions (MCQ/SEQs):

Multiple choice questions (MCQ/SEQs) are a form of assessment for which students are asked to select the best choice from a list of answers.
MCQ/SEQ consists of a stem and a set of options. The stem is usually the first part of the assessment that presents the question as a problem to be solved; the question can be an incomplete statement which requires to be completed and can include a graph, a picture or any other relevant information. The options are the possible answers that the student can choose from, with the correct answer called the key and the incorrect answers called distractors.
Correct answer carries one mark, and incorrect 'zero mark'. There is NO negative marking.

Students mark their responses on specified computer-based sheet designed for the college.
The block exam will comprise of 85 MCQ/ 7 SEQs each of 5 marks and will be compiled according to the shared blueprint.

Short Essay Questions (SEQ)

Short Essay questions generally ask for brief, text-based responses. They can be used to assess students' understanding of and ability to think with subject matter content, discourage guessing of answers, in-depth knowledge of concepts, and formulation of an answer.

Objective Structured Practical or Clinical Examination (OSCE / OSPE)

- The content may assess application of knowledge, or practical skills.
- Student will complete task in define time at one given station.
- All the students are assessed on the same content by the same examiner in the same allocated time.
- A structured examination will have observed, interactive and rest stations.
- Observed and interactive stations will be assessed by internal or external examiners.
- Rest station is a station where there is no task given, and in this time student can organize his/her thoughts.
- The Block OSPE / OSCE will be comprise of 12 examined stations. The stations will be assigned according to the shared blueprint.

Internal Evaluation:

Internal evaluation is a process of quality review undertaken within an institution for its own ends. Internal evaluation criteria will be shared with faculty and 20 % on internal assessment will be observed in each module.

Attendance Requirement:

A minimum of 85% attendance is mandatory to sit for the examinations.

Professional Examination:

Criteria for appearing in Professional examination are according to rules and regulations shared by UHS which are available on their website. The criteria is;

- At least 85 % cumulative attendance in all blocks.
- An average 50 % minimum score in all blocks
- Certificate of good conduct from college
- Certificate of having appeared in all block exams conducted by the college

Learning Resources for Students

Anatomy

- Snell Clinical Anatomy 10th ed
- B.D Churasia
- Nelter Atlas
- Langman Embryology (12th Edi)
- Laiq Hassain Basic Histology (8th Ed)
- Difore Atlas Histology

Physiology

- Guyton and Hall physiology (14th Ed)
- Essentials of Medical Physiology by Mushtaq Ahmed

Biochemistry

- Harpers Illustrated Biochemistry (32nd Ed)
- Lippincott's Biochemistry
- Essentials of Medical Biochemistry vol 1&2 by Mushtaq Ahmed.

Community Medicine:

- Parks Textbook of Preventive and Social Medicine. K. Park (Editor)

Pathology:

- Vinary Kumar, Abdul K. Abbas and Nelson Fausto Robbins and Cotran, Pathologic basis of disease. WB Saunders.

Pharmacology:

- Basic and Clinical Pharmacology by Katzung, McGraw-Hill.

Behavioral Sciences:

- Handbook of Behavioral Sciences by Prof. Mowaddat H.Rana, 3rd Edition

Apart from these resource learning, students can consult books available in library or recommended by the specialty experts.