



## **Jinnah Medical & Dental College**

### **Respiratory Module 1 & 2**

#### **Study Guide**



**MBBS  
2022-23**

Health is a state of complete  
harmony of the body, mind and  
spirit.

B.K.S Lyengar

## **VISION**

To set local and global standards for quality patient outcomes – creating a culture of excellence to promote a transformative experience for the 21st century clinicians, educators and researchers to benefit all humanity.

## **MISSION**

To develop well-rounded academicians, thinkers, clinicians and researchers by strengthening a global view, broadening intellectual foundations and teach effective communication. It is our aspiration to cultivate creative and critical thinking skills for problem solving, sensitive to cultural and ethical values and responsibilities. Our graduates will be role models and society leaders.

## Team Members of Respiratory Module I &II 2022-23

<b>Name</b>	<b>Committee</b>	<b>Department</b>
Professor Dr. Muhammad Baqir Soomro	Member	Anatomy
Professor Dr. Shahid Ahsen	Member	Biochemistry
Professor Dr. Sadaf Fatima	Member	Physiology
Professor Dr. Sanower Ali	Member	Community Medicine
Professor Dr. Imran Afzal	Member	Forensic Medicine
Professor Dr. Mahdev Harani	Member	Pathogen & Microbiology
Professor Dr. Samia Perwaiz Khan	Member	Pharmacology
Dr. Zeelaf Shahid Associate Director	Member	Medical Education

## **Introduction**

Assalam - u-Alaikum and a very warm welcome to medical students in the Respiratory module. This module has been developed to impart integrated teaching as a part of modular curriculum in Jinnah Medical & Dental College, Karachi. Respiratory 1 module (1<sup>st</sup> year) covered in 4 weeks and Respiratory 2 module (3<sup>rd</sup> year) covered in 4 weeks. The modules had been planned to study the normal structure and functions of respiration in context of related clinical problems. This will benefit the learners to understand the basic information in relation to applied sciences.

The respiratory system is the network of organs and tissues that help you breathe. It includes your airways, lungs and blood vessels. The muscles that power your lungs are also part of the respiratory system. These parts work together to move oxygen throughout the body and clean out waste gases like carbon dioxide.

This module will comprehensively provide insight for respiratory diseases like Asthma and tuberculosis with oncological conditions as well. It provides with abnormal function and corrective measures with underlying mechanism of diseases and their treatment and prevention aspects.

## **Rationale**

It is designed to provide students with not only knowledge about basics of Respiration but also develop their ability to apply information to solve clinical problems



## JMDC CURRICULUM SEQUENCE: MBBS 1-5 YEARS

Year	Module 1	E O M	Module 2	E O M	Module 3	E O M	Module 4	E O M	Module 5	EOM* Exam of Module								
<b>1</b>	Foundation-1 8 weeks		Blood-1 4 weeks		Locomotor-1 8 weeks		Respiratory-1 4 weeks		CVS-1 4 weeks									
<b>PAKISTAN STUDIES &amp; ISLAMIAT</b>																		
<b>2</b>	Module 6	E O M	Module 7	E O M	Module 8	E O M	Module 9	E O M	Module 10	E O M	Module 11	E O M	Module 12	EOM				
	GIT-1 4 weeks		Head & Neck-1 5 weeks		Neurosciences-1 7 weeks		Special Senses 3 weeks		Endocrine-1 5 weeks		Reproductive-1 4 weeks		Urinary-1 5 weeks					
<b>Communication Skills Patient Safety &amp; Infection Control Professionalism &amp; Ethics</b>																		
<b>3</b>	Module 13	E O M	Module 14	E O M	Module 15	E O M	Module 16	E O M	Module 17	E O M	Module 18	EOM						
	Foundation 2 10 weeks		Blood-2 5 weeks		Locomotor-2 4 weeks		Respiratory-2 4 weeks		CVS-2 5 weeks		GIT-2 7 weeks							
<b>Clinical Rotations (Each Batch) WT* = Ward test</b>																		
<b>Communication Skills Patient Safety &amp; Infection Control Professionalism &amp; Ethics</b>																		
R1	Medicine 2 weeks		Psychiatry 2 weeks		Surgery 2 weeks		Ortho pedics 2 weeks		OBS/ GYN 2 weeks		Pediatrics 2 weeks		Eye 2 weeks		Ent 3 weeks			
R2	Medicine 2 weeks		Psychiatry 2 weeks		Surgery 2 weeks		Ortho pedics 2 weeks		OBS/ GYN 2 weeks		Pediatrics 2 weeks		Eye 2 weeks		Ent 3 weeks			
<b>4</b>	Module 19	E O M	Module 20	E O M	Module 21	E O M	Module 22	E O M	Module 23	E O M	Module 24	E O M	Module 25	E O M	Module 26	E O M	Module 27	EOM
	Nervous Sys & Psychiatry 2 8 weeks		H & N & SP Senses 2 (Eye) 4 weeks		H & N & SP Senses 3 (Eye) 4 weeks		Endocrinology 2 4 weeks		Repro 2 6 weeks		Urinary 2 4 weeks		Derma 2 weeks		Orthopedics 2 weeks		Rehab 2 weeks	
<b>Lectures ENT</b>																		
<b>Clinical Rotations (Each Batch)</b>																		
<b>Communication Skills Patient Safety &amp; Infection Control Professionalism &amp; Ethics</b>																		
R1	Medicine 3 weeks		Psychiatry 3 weeks		Surgery 3 weeks		Ortho pedics 3 weeks		OBS/ GYN 3 weeks		Pediatrics 3 weeks		Eye 3 weeks		Ent 3 weeks			
R2	Medicine 3 weeks		Psychiatry 3 weeks		Surgery 3 weeks		Ortho pedics 3 weeks		OBS/ GYN 3 weeks		Pediatrics 3 weeks		Eye 3 weeks		Ent 3 weeks			
<b>LECTURES</b>																		
<b>R***= Rotation</b>																		
<b>5</b>	<b>Medicine</b>				<b>Surgery</b>				<b>OBS/Gynae</b>				<b>Pediatrics</b>					
<b>Clinical Rotations</b>																		
<b>Communication Skills Patient Safety &amp; Infection Control Professionalism &amp; Ethics</b>																		
R1	Medicine 4 weeks				Surgery 4 weeks				OBS/ GYN 4 weeks				Pediatrics 4 weeks					
R2	Medicine 5 weeks				Surgery 5 weeks				OBS/ GYN 5 weeks				Pediatrics 5 weeks					

## Students Assessment

There will be an end of module/rotation ward test after completion of module/clinical posting which will comprise the following components: -

i. Written Assessment

The theory paper will have components of one – best type multiple – choice questions (MCQs).

ii. Practical / lab examination:

This will comprise Objective Structured Clinical Examination (OSCE) The OSCE will have both observed and non-observed stations. The end of clinical posting will be of 2 hours duration. This will comprise the following components:

The OSPE/ OSCE will be conducted in batches. The students will be having different patterns of OSPE/OSCE in the subjects of Basic and clinical sciences.

Summary of marks of each module exam

Theory (BCQs) = 100 marks

OSPE (10 stations) = 100 marks

Total = 200 marks

Internal Assessment:

- Continuous monitoring of attendance and practical assessment in short groups By Mini CEX and logbooks.
- It may be in the form of MCQs (BCQs), Ward tests, and OSCE.

- Internal assessment carries 20% weightage

#### Course Evaluation:

Course evaluation will be obtained through a feedback form which will be posted on the JMC website

#### Mandatory Policy:

Eligibility for sitting in Professional Examinations is as follows:

- 75% overall Class Attendance
- 75% Attendance all Clinical Wards with passing marks in all Clinical Ward Tests.
- Minimum 40% aggregate marks on all Internal Examinations (Module Tests, Midterm, Pre-Professional Examinations)
- MBBS 1<sup>st</sup>Year: Complete all Professional Communication assignments with passing marks
- MBBS 1<sup>st</sup>& 2<sup>nd</sup>Year: Obtain passing marks in Behavioral Sciences & Research Module assessments
- MBBS 2<sup>nd</sup>Year: Presentation in Journal club at least twice in a year
- MBBS 4<sup>th</sup>& Final Year: CPC Presentation at least once in a year
- Skills Labs: Must be completed with passing marks
- Research Paper must be completed before MBBS 4 Professional Examination

#### Failure to Meet the Eligibility Requirements:

- A Student failing to meet the above listed eligibility for sitting in the professional examination will NOT be allowed to sit in 1<sup>st</sup> attempt of the Professional Examination. The college has the right to withhold all students who however, not met the eligibility requirements from sitting in the 1<sup>st</sup> attempt.
- Such students who have been withheld from sitting in the 1<sup>st</sup> attempt of the Professional exam because of failure to meet the eligibility requirements will be allowed only to sit in the retake of that examination.  
It is expected that deficiency in requirements of Professional communication assignments, Behavioral Sciences & Research Module assessments, journal Club presentations, CPC,



Skills Labs must be made up and fulfilled before a student will allowed to sit in the retake exam.

#### DETAILS OF ATTENDANCE POLICY

The CR is responsible to bring attendance sheets from Student Affairs Office to each class. At the end of class, the attendance sheet must be signed and returned by the faculty member to the Student Affairs Office. No attendance sheets from students will be accepted.

These attendances will be compiled together as follows:

**LECTURE ATTENDANCE** = # Lectures Attended / Total # of Lectures

**PRACTICAL ATTENDANCE** = # Practicals Attended / Total # of Practicals

**TUTORIAL ATTENDANCE** = # Tutorials Attended / Total # of Tutorials

**NOTE:** All tutorials will be conducted by a Senior Faculty Member (AP or above), assisted by a Junior Faculty Member (Lecturer)

**FINAL CLASS ATTENDANCE =**

**%Lecture Attendance + %Tutorial Attendance + %Practical Attendance**

## Teaching / Learning Methods

The teaching learning sessions of this module will be of diverse types:

- a. Large group interactive sessions (LGIS)
- b. Small group teaching will include tutorials and, case – based learning session.
- c. Problem – based learning sessions.
- d. Practical session will comprise sessions on early exposure to clinical methods and practical laboratory demonstrations.
- e. Seminars: on different topics, in which students will make oral presentations on different aspects of the allocated topic.
- f. Self-directed learning sessions: This is the time during which students are expected to revise what they have learnt in the class, clear their concepts by consulting different textbooks, reference material and prepare their assignments and projects.

## Main Content Areas

### Anatomy

- Introduction to thoracic cage, thoracic inlet and outlet
- Thoracic vertebrae & joints of thoracic wall
- Thoracic wall muscles & fascia of thoracic wall & movements
- Neurovascular supply of thoracic wall
- Mediastinum, Superior, Anterior, Middle and Posterior mediastinum (Boundaries & Contents)
- Gross Anatomy of Lungs and Pleura
- Vasculature of lungs, bronchial & pulmonary vessels, & lymphatics of thorax
- Histology of respiratory system
- Development of respiratory system and its anomalies

### Biochemistry

- Phospholipids
- Regulation of acid base balance
- Respiratory pH disturbances
- Respiratory compensation mechanism

### Physiology

- Introduction to respiratory physiology
- Mechanics of respiration
- Lung compliance
- Pulmonary volumes and capacities
- Pulmonary circulation V/Q relationship
- Diffusion of gases
- Respiratory adjustments to exercise, high altitude & deep sea
- Hypoxia and its types
- Regulation of respiration
- Pulmonary causes of Dyspnoea
- Transport of CO<sub>2</sub>
- Oxygen transport
- Oxygen Hb curve

### Community medicine

- Pulmonary tuberculosis and its prevention
- Asthma and its prevention
- Chicken pox and its prevention
- Influenza and its prevention

- Pertussis and its prevention
- Measles and its prevention
- Air Pollution
- Pneumonia, SARS & Covid

### **Forensic medicine**

- Asphyxia I
- Asphyxia II
- Asphyxia III
- Toxicology– Organophosphate insecticides poisoning
- Toxicology- Chloro group of insecticides (D.D.T.)

### **Pathology & microbiology**

- Congenital Anomalies of respiratory system, Atelectasis & Pulmonary edema
- Acute lung injury (ALI) and acute respiratory distress syndrome (ARDS)
- Obstructive lung diseases
- Chronic Interstitial restrictive lung diseases
- Pulmonary Infections
- Pleural pathology
- Bacteria and fungi causing pneumonia
- Mycobacterium tuberculosis
- Respiratory viruses
- Childhood viruses

### **Pharmacology**

- Drugs used to treat bronchial asthma & COPD- (I & II)
- Drug used in Tuberculosis and leprosy (I & II)
- Pharmacology of Histamine & Anti-histamines
- Drug used in Community Acquired Pneumonia

## **GENERAL LEARNING OBJECTIVES:**

By the end of this module, the students will be able to:

### **ANATOMY**

- Describe the thoracic cage and its boundaries, thoracic inlet and outlet
- Discuss Thoracic vertebrae & joints of thoracic wall
- Describe Thoracic wall muscles & fascia of thoracic wall & movements
- Discuss Neurovascular supply of thoracic wall
- Discuss Mediastinum, Superior, Anterior, Middle and Posterior mediastinum
- Explain Vasculature of lungs, bronchial & pulmonary vessels, & lymphatics of thorax
- Develop respiratory system and its anomalies

### **PHYSIOLOGY**

- Introduce respiratory physiology
- Explain Mechanics of respiration
- Discuss Lung compliance
- Describe Pulmonary volumes and capacities
- Pulmonary circulation V/Q relationship
- Explain Diffusion of gases
- Discuss Respiratory adjustments to exercise, high altitude & deep sea
- Explain Hypoxia and its types
- Describe Regulation of respiration
- Discuss Pulmonary causes of Dyspnoea
- Explain Transport of CO<sub>2</sub>
- Discuss Oxygen transport
- Describe Oxygen Hb curve

### **BIOCHEMISTRY**

- Discuss Phospholipids
- Explain Regulation of acid base balance
- Discuss Respiratory pH disturbances
- Explain Respiratory compensation mechanism

### **COMMUNITY MEDICINE**

- Describe Pneumoconiosis and its prevention
- Discuss Pulmonary tuberculosis and its prevention
- Explain Asthma and its prevention

- Discuss Chicken pox and its prevention
- Describe Influenza and its prevention
- Discuss Diphtheria and its prevention
- Explain Measles and its prevention
- Describe Pertussis and its prevention
- Explain Air Pollution
- Describe Pneumonia, SARS & Covid

## **FORENSIC MEDICINE**

- Discuss Asphyxia I, II & III
- Explain Toxicology– Organophosphate insecticides poisoning
- Describe Toxicology- Chloro group of insecticides (D.D.T.)

## **PATHOLOGY & MICROBIOLOGY**

- Discuss Congenital Anomalies of respiratory system, Atelectasis & Pulmonary oedema
- Describe Acute lung injury (ALI) and acute respiratory distress syndrome (ARDS)
- Discuss Obstructive lung diseases
- Explain Chronic Interstitial restrictive lung diseases
- Describe Pulmonary Infections
- Discuss Pleural pathology
- Describe Bacteria and fungi causing pneumonia
- Explain Mycobacterium tuberculosis
- Describe Respiratory viruses
- Discuss Childhood viruses

## **PHARMACOLOGY**

- Drugs used to treat bronchial asthma & COPD- (I & II)
- Drug used in Tuberculosis and leprosy (I & II)
- Pharmacology of Histamine & Anti-histamines
- Drug used in Community Acquired Pneumonia

## Recommended Reading Material

### Anatomy

#### A. GROSS ANATOMY

1. K.L. Moore, Clinically Oriented Anatomy
2. Richard L. Drake, Gray's anatomy for students

#### B. HISTOLOGY

1. B. Young J. W. Health Wheather's Functional Histology
2. di Fiore's Atlas of histology and functional correlations

#### C. EMBRYOLOGY

1. Keith L. Moore. The Developing Human
2. Langman's Medical Embryology

### Biochemistry

#### TEXT BOOKS

1. Harper's Illustrated Biochemistry
2. Lippincott's Illustrated reviews of Biochemistry
3. Lehninger's Principles of Biochemistry
4. Biochemistry by Devlin

### Physiology

#### A. TEXTBOOKS

1. Textbook of Medical Physiology by Guyton And Hall
2. Human Physiology by Lauralee Sherwood
3. Berne & Levy Physiology
4. Best & Taylor Physiological Basis of Medical Practice

#### B. REFERENCE BOOKS

1. Ganong's Review of Medical Physiology

### **Community Medicine**

- Public Health and Community Medicine by Shah Ilyas Ansari, 8th Edition
- Park's Textbook of Preventive and Social Medicine by K Park 24th Edition Epidemiology and Biostatistics:
- Epidemiology by Leon Gordis, Fifth Edition
- Basic Statistics for the Health Sciences by Jan W. Kuzma, Fifth Edition.

### **Forensic Medicine**

- Gautam Biswas Book of Forensic Medicine
- Parikh's Book of Forensic Medicine

### **Pathology**

- Basis of Pathology by Robbins & Cotran
- Review of Microbiology by Livingston

### **Pharmacology**

1. Pharmacodynamic
2. Katzung Basic & Clinical Pharmacology- 15th edition
3. Katzung & Trevor (Review) 13th Edition
4. Rang and Dale's Pharmacology- 6th Edition



## Module 1

### Organization

#### Time requirements: Basic Medical Sciences

- |                |           |
|----------------|-----------|
| • Anatomy      | 18 Hours  |
| • Physiology   | 43 Hours  |
| • Biochemistry | 5.5 Hours |

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66.5 Hours

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## Respiratory Module II

### Organization

#### Time requirements:

- |                            |          |
|----------------------------|----------|
| • Community Medicine       | 11 Hours |
| • Forensic Medicine        | 9 Hours  |
| • Pathology & Microbiology | 17 Hours |
| • Pharmacology             | 7.5Hours |

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44.5 Hours

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**Total = 111 Hours**

# **Respiratory-1 Module**

# ANATOMY

## Lectures

S. N O.	LEARNING OBJECTIVES By the end, the student should be able to	Content	TEACHING Activity Duration	ASSESSMENT
1	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the thoracic cage and its boundaries</li> <li><input type="checkbox"/> Describe thoracic Inlet and thoracic outlet</li> <li><input type="checkbox"/> Discuss intercostal muscles and their neuro-vasculature</li> <li><input type="checkbox"/> Describe supra-pleural membrane and endo-thoracic fascia</li> <li><input type="checkbox"/> Describe the position &amp; component of muscular &amp; tendinous part of diaphragm</li> <li><input type="checkbox"/> Describe the attachments of diaphragm</li> <li><input type="checkbox"/> Describe the blood supply and nerve supply of diaphragm</li> <li><input type="checkbox"/> Describe the opening present in the diaphragm and their respective levels</li> <li><input type="checkbox"/> Enumerate the structures passing through the openings and piercing the diaphragm</li> <li><input type="checkbox"/> List the functions of diaphragm</li> </ul> <p><b>(K)</b></p>	<p><b>Introduction to thoracic cage, thoracic inlet, and gross anatomy of diaphragm</b></p>	<p>LGIS 50 Mins</p>	<p>MCQs</p>
2	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe general features of vertebral column</li> <li><input type="checkbox"/> Describe spinal curvature in children and adults</li> <li><input type="checkbox"/> Discuss general characteristics of a vertebra and general features of thoracic vertebrae</li> <li><input type="checkbox"/> Differentiate typical and atypical vertebrae</li> <li><input type="checkbox"/> Discuss joints formed by thoracic vertebrae, general features of intervertebral joints, and costovertebral joints</li> <li><input type="checkbox"/> Enumerate the diseases related to vertebral column (scoliosis, lordosis, disc prolapse)</li> <li><input type="checkbox"/> Describe the features of diseases related to thoracic vertebrae</li> </ul> <p><b>(K)</b></p>	<p><b>Thoracic vertebrae &amp; joints of thoracic wall</b></p>	<p>LGIS 50 Mins</p>	<p>MCQs</p>
3	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the layers of thoracic wall</li> <li><input type="checkbox"/> Describe the attachment of muscles of thoracic wall, their actions &amp; nerve supply</li> <li><input type="checkbox"/> Describe the arrangement &amp; modifications of fascia</li> </ul> <p><b>(K)</b></p>	<p><b>Thoracic wall muscles &amp; fascia of thoracic wall &amp; movements</b></p>	<p>LGIS 50 Mins</p>	<p>MCQs</p>
4	<p>Describe the nerve supply of skin, fascia and muscles of thoracic wall</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the origin and course of arteries, and nerves supplying the thoracic wall</li> <li><input type="checkbox"/> Explain the venous drainage of thoracic wall, and its communications</li> </ul> <p><b>(K)</b></p>	<p><b>Neurovascular supply of thoracic wall</b></p>	<p>LGIS 50 Mins</p>	<p>MCQs</p>
5	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define mediastinum</li> <li><input type="checkbox"/> Describe the divisions of mediastinum</li> <li><input type="checkbox"/> Define the extent and boundaries of mediastinum</li> <li><input type="checkbox"/> Describe the boundaries of superior mediastinum</li> <li><input type="checkbox"/> List the contents of superior mediastinum</li> <li><input type="checkbox"/> Describe origin, extent and termination of aorta</li> <li><input type="checkbox"/> Describe the extent, branches and relations of Aorta within the superior mediastinum</li> <li><input type="checkbox"/> Explain the tributaries of superior vena cava within the superior mediastinum</li> <li><input type="checkbox"/> Discuss the nerves present in the superior mediastinum</li> </ul>	<p><b>Mediastinum, its divisions and contents of superior and anterior mediastinum</b></p>	<p>LGIS 50 Mins</p>	<p>MCQs</p>

	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the major viscera present in superior mediastinum</li> <li><input type="checkbox"/> Describe the boundaries and contents of anterior mediastinum</li> </ul> <p><b>(K)</b></p>			
6	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the boundaries of posterior mediastinum</li> <li><input type="checkbox"/> List the contents of posterior mediastinum</li> <li><input type="checkbox"/> Describe the extent and position of thoracic aorta in posterior mediastinum</li> <li><input type="checkbox"/> Enumerate the branches of thoracic aorta</li> <li><input type="checkbox"/> Describe the length, extent and relations of oesophagus</li> <li><input type="checkbox"/> Describe the blood supply, nerve supply, venous drainage, &amp; lymphatics of oesophagus</li> <li><input type="checkbox"/> Discuss the clinical significance of anatomical constrictions of oesophagus</li> <li><input type="checkbox"/> Define Azygos system of veins</li> <li><input type="checkbox"/> Describe the formation, course, relations and tributaries of azygos, Hemi-azygos &amp; Accessory hemi-azygos veins</li> <li><input type="checkbox"/> Discuss variations in the origin of azygos vein</li> <li><input type="checkbox"/> Discuss the clinical importance of Azygos system of vein</li> </ul> <p><b>(K)</b></p>	<b>Posterior mediastinum-I (Thoracic Aorta, Oesophagus &amp; Azygos System of vein)</b>	LGIS 50 Mins	MCQs
7	<ul style="list-style-type: none"> <li><input type="checkbox"/> Discuss the thoracic part of sympathetic chain, ganglia, and branches</li> <li><input type="checkbox"/> Describe the origin, intrathoracic course and branches of Vagus &amp; phrenic nerves</li> <li><input type="checkbox"/> Describe origin, extent, tributaries, territory of drainage &amp; termination of thoracic duct</li> </ul> <p><b>(K)</b></p>	<b>Posterior mediastinum-II (Thoracic sympathetic trunk, thoracic duct, phrenic and vagus nerve)</b>	LGIS 50 Mins	MCQs
8	<ul style="list-style-type: none"> <li><input type="checkbox"/> Enumerate the parts of respiratory tract</li> <li><input type="checkbox"/> Describe the clinical (upper and lower respiratory tract) and anatomical (Conducting and respiratory) divisions of respiratory tracts</li> <li><input type="checkbox"/> Describe parietal and visceral pleura and its innervation</li> <li><input type="checkbox"/> Describe arrangement of pleura according to lines of orientation (mid sternal, mid clavicular and axillary etc)</li> <li><input type="checkbox"/> Discuss clinical anatomy of pleura (related to effusion and pleural tap etc)</li> <li><input type="checkbox"/> Name the diseases related to pleura</li> <li><input type="checkbox"/> Summarize the features of diseases related to pleura</li> </ul> <p><b>(K)</b></p>	<b>Introduction to respiratory tract (Gross anatomy of pleura and lung)</b>	LGIS 50 Mins	MCQs
9	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the origin, course and termination of bronchial vessels and their territory of supply/ drainage</li> <li><input type="checkbox"/> Discuss the origin, course and termination of pulmonary vessels and their functions</li> <li><input type="checkbox"/> Describe the nerve supply of lung</li> <li><input type="checkbox"/> Describe the different groups of lymph nodes in thorax</li> <li><input type="checkbox"/> Discuss the deep as well as the superficial lymphatics of thorax</li> <li><input type="checkbox"/> Discuss the significance of lymphatics drainage of thorax</li> </ul> <p><b>(K)</b></p>	<b>Vasculature of lungs, bronchial &amp; pulmonary vessels, &amp; lymphatics of thorax</b>	LGIS 50 Mins	MCQs
10	<ul style="list-style-type: none"> <li><input type="checkbox"/> Name the types of epithelia lining the various parts of respiratory system</li> <li><input type="checkbox"/> Explain the histological features of various parts of respiratory system</li> </ul> <p><b>(K)</b></p>	<b>Histology of respiratory epithelium and its variations</b>	LGIS 50 Mins	MCQs

11	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the histological features of different layers of trachea</li> <li><input type="checkbox"/> Describe the divisions of bronchial tree</li> <li><input type="checkbox"/> Discuss the structural variations in different parts of bronchial tree</li> <li><input type="checkbox"/> Describe the structure of alveoli and interalveolar septum</li> <li><input type="checkbox"/> Relate the functions of different type of cells, forming the alveolar wall</li> <li><input type="checkbox"/> Describe the structure and function of blood -air barrier</li> </ul> <p><b>(K)</b></p>	<b>Histology of trachea and lung</b>	LGIS 50 Mins	MCQs
12	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define the intra-embryonic mesoderm and its parts</li> <li><input type="checkbox"/> Discuss the divisions of lateral plate mesoderm into visceral and parietal layers enclosing intraembryonic coelom</li> <li><input type="checkbox"/> Describe the Cephalo-caudal and transverse folding of embryonic disc</li> <li><input type="checkbox"/> Specify the extent of intraembryonic coelom after folding and its divisions into three serous cavities</li> <li><input type="checkbox"/> Discuss the formation of Pleuro-pericardial and Pleuro-peritoneal membranes</li> <li><input type="checkbox"/> Define embryonic components of diaphragm (Septum Trans-versum etc)</li> <li><input type="checkbox"/> Discuss the steps of development of diaphragm from its composite embryonic derivatives</li> <li><input type="checkbox"/> Discuss anomalies related to its development</li> </ul> <p><b>(K)</b></p>	<b>Development of body cavities and diaphragm, and their anomalies</b>	LGIS 50 Mins	MCQs
13	<ul style="list-style-type: none"> <li><input type="checkbox"/> Discuss the formation of Laryngo- tracheal groove &amp; respiratory diverticulum or Lung Bud</li> <li><input type="checkbox"/> Describe the branching of primitive bronchi</li> <li><input type="checkbox"/> Discuss the stages of development / maturation of Lungs</li> <li><input type="checkbox"/> Name the congenital anomalies of respiratory system (tracheoesophageal fistula etc)</li> <li><input type="checkbox"/> Describe the main features of the common congenital anomalies</li> </ul> <p><b>(K)</b></p>	<b>Development of respiratory system and its anomalies</b>	LGIS 50 Mins	MCQs
14	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explain Thorax cross sectional anatomy</li> <li><input type="checkbox"/> Identify mediastinal great vessels, organs and lymph nodes on cross sectional images at different levels</li> <li><input type="checkbox"/> Identify the structures at T4 vertebral level or angle of Louis</li> </ul> <p><b>(K)</b></p>	<b>Cross sectional anatomy of thorax</b>	LGIS 50 Mins	MCQs

## ANATOMY

## Demonstrations

S. N O .	LEARNING OBJECTIVES  By the end of module, the students should be able to	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the borders and surfaces of sternum</li> <li><input type="checkbox"/> Summarize the locations of the muscles attached on sternum</li> <li><input type="checkbox"/> Enumerate the type of joints formed at sternum</li> <li><input type="checkbox"/> Relate the type of joint with its functions (clinical significance)</li> <li><input type="checkbox"/> Classify ribs</li> <li><input type="checkbox"/> Discuss the features of ribs</li> <li><input type="checkbox"/> Differentiate typical from atypical ribs</li> <li><input type="checkbox"/> Describe the attachments (muscles and ligaments) on ribs</li> <li><input type="checkbox"/> Discuss joints formed by the ribs</li> <li><input type="checkbox"/> Describe the clinical features of cervical rib and rib fracture</li> <li><input type="checkbox"/> Describe the functional significance of sternum</li> </ul> <b>(K) (S)</b>	<b>Sternum &amp; Ribs [muscle attachment, typical and atypical ribs]</b>	Tutorial 90 mins + Practical 90 mins	MCQ's OSPE
2.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe apex, base, surfaces and borders of lungs</li> <li><input type="checkbox"/> Describe Hilum /root of the lungs</li> <li><input type="checkbox"/> Discuss Fissures and lobes of the lungs</li> <li><input type="checkbox"/> Describe the divisions of bronchial tree</li> <li><input type="checkbox"/> Describe the bronchopulmonary segmentation and its Importance</li> </ul> <b>(K) (S)</b>	<b>Gross anatomy of lung</b>	Tutorial 90 mins  + Practical 90 mins	MCQ's OSPE
3.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe surface marking of ribs and intercostal spaces</li> <li><input type="checkbox"/> Mark the anatomical landmarks of important thoracic arteries and veins</li> <li><input type="checkbox"/> Identify the surface anatomy of trachea and main bronchi</li> <li><input type="checkbox"/> Identify the important anatomical landmarks of lungs</li> <li><input type="checkbox"/> Mark the surface anatomy of pleura</li> </ul> <b>(K) (S)</b>	<b>Surface anatomy of thoracic wall, lungs &amp; pleura</b>	Tutorial 90 mins + Practical 90 mins	MCQ's OSPE

## HISTOLOGY

## PRACTICALS

S. N O .	LEARNING OBJECTIVES  By the end of module, the students should be able to	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Identify the various epithelial tissue and its variations in different parts of conducting system, as shown in the slides of respiratory tract</li> </ul> <b>(S)</b>	<b>Respiratory epithelium and its variations</b>	Practical 90 mins	OSPE
2.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the histological characteristics of different layers of trachea based on light microscope findings</li> <li><input type="checkbox"/> Identify different components of bronchial tree</li> <li><input type="checkbox"/> Identify alveolar duct, alveolar sac and alveoli</li> </ul> <b>(S)</b>	<b>Histology of trachea and lung</b>	Practical 90 mins	OSPE

## BIOCHEMISTRY

S. N O .	LEARNING OBJECTIVES  By the end of module, the students should be able to	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Classify the Phospholipids in the human body with examples</li> <li><input type="checkbox"/> Discuss the synthesis and degradation of phospholipids</li> <li><input type="checkbox"/> Discuss the functions of phospholipids in the human body</li> <li><input type="checkbox"/> Describe the synthesis and biochemical role of surfactant</li> <li><input type="checkbox"/> Discuss the clinical significance of Acute Respiratory Distress Syndrome</li> </ul> <p><b>(K)</b></p>	<b>Phospholipids</b>	LGIS 50 Mins + Tutorial 90 mins	MCQ's
2.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explain the mechanism of acid production</li> <li><input type="checkbox"/> List the volatile &amp; non-volatile acids</li> <li><input type="checkbox"/> Describe the Henderson's Hassell bach equation</li> <li><input type="checkbox"/> Explain the mechanisms of buffer in human body</li> <li><input type="checkbox"/> Discuss the normal regulation of pH by buffers, respiratory and renal systems</li> <li><input type="checkbox"/> Explain the anion gap and its biochemical significance</li> <li><input type="checkbox"/> Interpret the values of Arterial Blood Gases (ABGs)</li> </ul> <p><b>(K)</b></p>	<b>Regulation of acid base balance</b>	LGIS 50 Mins	MCQ's
3.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explain the role of respiration in pH regulation</li> <li><input type="checkbox"/> Explain the mechanism of pH regulations in respiratory disturbances</li> <li><input type="checkbox"/> Explain how to analyse ABGs in respiratory disorders</li> <li><input type="checkbox"/> Discuss the clinical disorder of respiratory pH disturbances and their ABGs</li> </ul> <p><b>(K) (S)</b></p>	<b>Respiratory pH disturbances</b>	LGIS 50 Mins + Tutorial 90 mins	MCQ's OSPE
4	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the compensation of pH disturbances by the respiratory system</li> <li><input type="checkbox"/> Describe compensation of pH disturbances due to respiratory diseases</li> <li><input type="checkbox"/> Describe respiratory acidosis and respiratory alkalosis</li> <li><input type="checkbox"/> Interpret the respective ABGs in various clinical disorders</li> </ul> <p><b>(K) (S)</b></p>	<b>Respiratory compensation mechanism</b>	LGIS 50 Mins + Tutorial 90 mins	MCQ's OSPE

**BIOCHEMISTRY****PRACTICALS**

<b>S. NO.</b>	<b>LEARNING OBJECTIVES</b> <b>By the end of module, the students should be able to</b>	<b>Content</b>	<b>TEACHING Activities (Duration)</b>	<b>ASSESSMENT</b>
1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Identify the chemical tests and bio-techniques to detect pH of solutions</li> <li><input type="checkbox"/> Outline the methods for detection of pH of solutions in a sample</li> <li><input type="checkbox"/> Determine the pH of different solutions using pH meter and litmus paper</li> <li><input type="checkbox"/> Interpret clinical conditions correlated with their laboratory investigations</li> </ul> <p><b>(S)</b></p>	<b>PH meter</b>	Demonstration 90 mins	OSPE

**PHYSIOLOGY**

<b>S. NO.</b>	<b>LEARNING OBJECTIVES</b> <b>By the end of module, the students should be able to</b>	<b>Contents</b>	<b>LEARNING Activities (Duration)</b>	<b>ASSESSMENT</b>
1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> List parts of upper and lower respiratory tract</li> <li><input type="checkbox"/> Describe the functions of respiratory passages</li> </ul> <p><b>(K)</b></p>	<b>Introduction to respiratory physiology</b>	LGIS 50 MINS	MCQs
2.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explain mechanism of pulmonary ventilation with reference to thoracic cage &amp; muscles of respiration</li> <li><input type="checkbox"/> Define alveolar pressure, pleural pressure, and alveolar ventilation</li> <li><input type="checkbox"/> Discuss trans-pulmonary pressure and its changes during respiration</li> <li><input type="checkbox"/> Define dead space</li> </ul> <p><b>(K)</b></p>	<b>Mechanics of respiration</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
3.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define lung compliance</li> <li><input type="checkbox"/> List factors affecting lung compliance</li> <li><input type="checkbox"/> Describe the role of surfactant in maintaining lung compliance</li> <li><input type="checkbox"/> Differentiate compliance work, tissue resistance work &amp; airway resistance work</li> </ul> <p><b>(K)</b></p>	<b>Lung compliance</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs



4.	<input type="checkbox"/> List the pulmonary volumes & capacity with their normal values & significance in pulmonary function test <input type="checkbox"/> Determine functional residual capacity, residual vol. & total lung capacity (helium dilution method) <b>(K)</b>	<b>Pulmonary volumes and capacities</b>	LGIS 50 MINS + CBL 90 MINS (Tutorial)	MCQs
5.	<input type="checkbox"/> Describe pressure in pulmonary circulation & blood flow zones of lung (1,2,3) <input type="checkbox"/> Explain pulmonary capillary dynamics <input type="checkbox"/> Explain mechanism of development of pulmonary oedema <input type="checkbox"/> State the importance of ventilation/perfusion ratio <b>(K)</b>	<b>Pulmonary circulation V/Q relationship</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
6.	<input type="checkbox"/> Define respiration unit & respiration membrane <input type="checkbox"/> Describe mechanics of diffusion across respiration membrane & factors effecting diffusion <input type="checkbox"/> List partial pressure of respiratory gases in atmosphere, humidified, alveolar & expired air <input type="checkbox"/> Briefly describe the diffusing capacity of O <sub>2</sub> and CO <sub>2</sub> <b>(K)</b>	<b>Diffusion of gases</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
7.	<input type="checkbox"/> Describe the chloride shift <input type="checkbox"/> Relate effect of CO <sub>2</sub> and O <sub>2</sub> transport (Haldane effect) <input type="checkbox"/> Define respiratory exchange ratio <b>(K)</b>	<b>Transport of Carbon dioxide (CO<sub>2</sub>)</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
8.	<input type="checkbox"/> Explain transport of O <sub>2</sub> from lungs to body tissues <input type="checkbox"/> Briefly describe the role of Hb in O <sub>2</sub> transport <input type="checkbox"/> Explain <input type="checkbox"/> Define Bohr effect <b>(K)</b>	<b>Oxygen (O<sub>2</sub>) transport and O<sub>2</sub>Hb curve</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
9.	<input type="checkbox"/> Describe the effects of exercise on respiratory system <b>(K)</b>	<b>Respiratory adjustments to exercise</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
10.	<input type="checkbox"/> Explain physiology of acclimatization and deep-sea Diving <b>(K)</b>	<b>Respiratory adjustments to high altitude &amp; deep sea</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
11.	<input type="checkbox"/> Define hypoxia and its types <input type="checkbox"/> Describe coughing & sneezing reflexes <b>(K)</b>	<b>Hypoxia and its types</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs

12.	<input type="checkbox"/> List the respiratory centres & their effect on the regulation of respiration <input type="checkbox"/> Describe the neural and chemical control of respiration <b>(K)</b>	<b>Regulation of respiration</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs
13.	<input type="checkbox"/> Describe the Pulmonary causes of Dyspnoea: Emphysema, Pneumonia, Atelectasis and Tuberculosis <b>(K)</b>	<b>Pulmonary causes of Dyspnoea</b>	LGIS 50 MINS + SGD 90 MINS (Tutorial)	MCQs

## PHYSIOLOGY

## PRACTICALS

S. NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Content	TEACHING Activities (Duration)	ASSESSMENT
1.	<input type="checkbox"/> Identify different parts of power lab with respect to respiration and recording of normal respiratory rate <b>(S)</b>	<b>Introduction to Power Lab (with respect to Respiration)</b>	Demonstration 90 mins	OSPE
2.	<input type="checkbox"/> Determine lung volumes and capacities (Spirogram) <b>(S)</b>	<b>Lung volume and capacities</b>	Demonstration 90 mins	OSPE
3.	<input type="checkbox"/> Perform respiratory function tests <input type="checkbox"/> Interpret results of respiratory function tests <b>(S)</b>	<b>Pulmonary Function Tests (spirometry)</b>	Demonstration 90 mins	OSPE

# **Week 4**

**End of Respiratory Module**

**Respiratory Module 1 Test Theory**

**Respiratory Module 1 Test OSCE**

# **Respiratory-11 Module**

## COMMUNITY MEDICINE

## Lectures

S. NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Content	TEACHING Activities (Duration)	Assessment
1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define pneumoconiosis</li> <li><input type="checkbox"/> List pneumoconiosis diseases</li> <li><input type="checkbox"/> Discuss the control and prevention of pneumoconiosis</li> </ul> <p><b>(K)</b></p>	<b>Pneumoconiosis and its prevention</b>	LGIS 50 MINS	MCQs
2.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Discuss the history &amp; causative organism of tuberculosis</li> <li><input type="checkbox"/> Why Tuberculosis remains a world-wide problem</li> <li><input type="checkbox"/> Discuss Tuberculosis situation in Pakistan</li> <li><input type="checkbox"/> List Epidemiological Indices of tuberculosis</li> <li><input type="checkbox"/> Explain TB-DOTS Therapy</li> <li><input type="checkbox"/> Discuss the control and prevention of tuberculosis</li> </ul> <p><b>(K)</b></p>	<b>Pulmonary tuberculosis and its prevention</b>	LGIS 50 MINS	MCQs
3.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define Asthma</li> <li><input type="checkbox"/> Discuss the sign and symptoms of Asthma</li> <li><input type="checkbox"/> Discuss the diagnosis criteria of Asthma</li> <li><input type="checkbox"/> Discuss the control and prevention of Asthma</li> </ul> <p><b>(K)</b></p>	<b>Asthma and its prevention</b>	LGIS 50 MINS	MCQs
4.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define Chicken pox disease</li> <li><input type="checkbox"/> Discuss the sign and symptoms of Chicken pox</li> <li><input type="checkbox"/> Discuss the diagnosis criteria of Chicken pox</li> <li><input type="checkbox"/> Discuss the control and prevention of Chicken pox</li> </ul> <p><b>(K)</b></p>	<b>Chicken pox and its prevention</b>	LGIS 50 MINS	MCQs
5.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define influenza</li> <li><input type="checkbox"/> Discuss the sign and symptoms of influenza</li> <li><input type="checkbox"/> Discuss the control and prevention of influenza</li> </ul> <p><b>(K)</b></p>	<b>Influenza and its prevention</b>	LGIS 50 MINS	MCQs
6.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Discuss the epidemiology of Diphtheria</li> <li><input type="checkbox"/> Explain the risk factors and consequences of Diphtheria</li> <li><input type="checkbox"/> Describe the signs and symptoms of Diphtheria</li> <li><input type="checkbox"/> Discuss the control and prevention of Diphtheria</li> </ul> <p><b>(K)</b></p>	<b>Diphtheria and its prevention</b>	LGIS 50 MINS	MCQs
7.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the aetiology of measles</li> <li><input type="checkbox"/> Describe the epidemiology of measles</li> <li><input type="checkbox"/> Describe the clinical features, assessment and diagnosis of measles</li> <li><input type="checkbox"/> Discuss the role of immunization in prevention of measles</li> </ul> <p><b>(K)</b></p>	Measles and its prevention	LGIS 50 MINS	MCQs
8.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the aetiology of pertussis</li> <li><input type="checkbox"/> Describe the epidemiology of pertussis</li> <li><input type="checkbox"/> Explain the clinical features, assessment and diagnostic criteria of Pertussis</li> <li><input type="checkbox"/> Discuss the process of control and prevention of Pertussis</li> </ul> <p><b>(K)</b></p>	<b>Pertussis and its prevention</b>	LGIS 50 MINS	MCQs

9.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe the situation of air Pollution</li> <li><input type="checkbox"/> Identify the sources of air pollution</li> <li><input type="checkbox"/> Explain the effects of air pollution on health</li> <li><input type="checkbox"/> Discuss the concept of green house effects, global warming and ozone depletion</li> <li><input type="checkbox"/> Discuss the methods to control air pollution</li> </ul> <p><b>(K)</b></p>	<b>Air Pollution</b>	LGIS 50 MINS	MCQs
10.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define pneumonia</li> <li><input type="checkbox"/> Classify different types of pneumonia</li> <li><input type="checkbox"/> Explain the mode of transmission of pneumonia</li> <li><input type="checkbox"/> List the predisposing factors of pneumonia</li> <li><input type="checkbox"/> Describe the measures for prevention</li> <li><input type="checkbox"/> Discuss the sign and symptoms, diagnostic criteria, control &amp; prevention of Covid 19</li> </ul> <p><b>(K)</b></p>	<b>Pneumonia, SARS &amp; Covid</b>	LGIS 50 MINS	MCQs

## FORENSIC MEDICINE

S. NO.	LEARNING OBJECTIVES	Content	TEACHING Activities (Duration)	Assessment
	<b>By the end of module, the students should be able to</b>			
1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define asphyxia</li> <li><input type="checkbox"/> Summarize the aetiology, pathophysiology and classic signs of asphyxia</li> <li><input type="checkbox"/> Enumerate the different types of asphyxia and violent asphyxia deaths</li> <li><input type="checkbox"/> Classify tissue anoxia according to Gordon's classification</li> <li><input type="checkbox"/> List the different types of hanging</li> <li><input type="checkbox"/> Explain the autopsy findings and medicolegal importance of hanging</li> <li><input type="checkbox"/> Differentiate between ante-mortem and post-mortem hanging</li> </ul> <p><b>(K)</b></p>	<b>Asphyxia I</b>	LGIS 50 MINS	MCQs

2.	<input type="checkbox"/> Diagnose strangulation, throttling, suffocation, smothering, gagging and choking based on post-mortem findings <input type="checkbox"/> Discuss the mechanism, diagnostic features, and autopsy findings of traumatic asphyxia. <b>(K)</b>	<b>Asphyxia II</b>	LGIS 50 MINS	MCQs
3.	<input type="checkbox"/> Define the types, mechanism and Post mortem findings of drowning. <input type="checkbox"/> Describe the causes of death due to drowning. <input type="checkbox"/> Highlight the importance of diatoms in deaths by drowning. <input type="checkbox"/> Define Sexual asphyxia (auto-erotic hanging) <b>(K)</b>	<b>Asphyxia III</b>	LGIS 50 MINS	MCQs
4.	<input type="checkbox"/> List commonly used insecticides <input type="checkbox"/> Classify organophosphate compounds <input type="checkbox"/> Describe the mode of action, signs and symptoms, treatment, Post mortem findings and medico legal importance of organophosphate and Carbamate poisoning <input type="checkbox"/> Describe the mode of action, signs, symptoms, treatment and post mortem findings of DDT Poisoning <b>(K)</b>	<b>Toxicology– Organophosphate insecticides poisoning</b>	LGIS 50 MINS	MCQs
5.	<input type="checkbox"/> Describe the mode of action, signs, symptoms, treatment and Post mortem findings of DDT Poisoning <b>(K)</b>	<b>Toxicology- Chloro group of insecticides (D.D.T.)</b>	LGIS 50 MINS	MCQs

## PATHOLOGY & MICROBIOLOGY

S. NO.	LEARNING OBJECTIVES	Content	Assessment
	<b>By the end of module, the students should be able to</b>		

1.	<ul style="list-style-type: none"> <li><input type="checkbox"/> List the types of congenital anomalies of respiratory system</li> <li><input type="checkbox"/> Describe the embryologic pathology, microscopic, and clinical features of these congenital anomalies</li> <li><input type="checkbox"/> Define Atelectasis and Pulmonary oedema</li> <li><input type="checkbox"/> Discuss the classification, pathogenesis, morphology, causes and clinical features of Atelectasis and Pulmonary oedema</li> <li><input type="checkbox"/> Differentiate between pathogenesis of hemodynamic and micro vascular alveolar injury</li> </ul> <p><b>(K)</b></p>	Congenital Anomalies of respiratory system, Atelectasis & Pulmonary oedema	LGIS 50 MINS	MCQs
2.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define ALI and ARDS</li> <li><input type="checkbox"/> List the conditions associated with development of ARDS</li> <li><input type="checkbox"/> Discuss pathogenesis, morphological and clinical features of ARDS / ALI</li> </ul> <p><b>(K)</b></p>	Acute lung injury (ALI) and acute respiratory distress syndrome (ARDS)	LGIS 50 MINS	MCQs
3.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define emphysema and chronic bronchitis</li> <li><input type="checkbox"/> Classify emphysema</li> <li><input type="checkbox"/> Describe the various clinical forms of emphysema.</li> <li><input type="checkbox"/> Discuss the aetiology, pathogenesis, morphology and clinical features of emphysema and chronic bronchitis</li> </ul> <p><b>(K)</b></p>	Obstructive lung diseases I (Emphysema, Chronic Bronchitis)	LGIS 50 MINS	MCQs
4.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define Asthma and Bronchiectasis</li> <li><input type="checkbox"/> Classify Asthma</li> <li><input type="checkbox"/> List the causes of Asthma, and Bronchiectasis</li> <li><input type="checkbox"/> Discuss the aetiology, pathogenesis, morphology and clinical features of Asthma and Bronchiectasis</li> </ul> <p><b>(K)</b></p>	Obstructive lung diseases II (Asthma, Bronchiectasis)	LGIS 50 MINS	MCQs
5.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define restrictive diseases of lung</li> <li><input type="checkbox"/> Classify restrictive diseases of lung (Fibrosing, Granulomatous, Eosinophilic, Smoking Related)</li> <li><input type="checkbox"/> Discuss the etiopathogenesis, morphology and clinical features of Chronic restrictive lung diseases</li> </ul> <p><b>(K)</b></p>	<b>Chronic Interstitial restrictive lung diseases</b>	LGIS 50 MINS	MCQs
6.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define Pneumoconiosis</li> <li><input type="checkbox"/> List the causative agents of Pneumoconiosis</li> <li><input type="checkbox"/> Discuss the pathogenesis, morphology and clinical features of Pneumoconiosis</li> </ul> <p><b>(K)</b></p>	<b>Pneumoconiosis</b>	LGIS 50 MINS	MCQs



7.	<input type="checkbox"/> Define Granulomatous diseases (Sarcoidosis) <input type="checkbox"/> Classify Granulomatous diseases <input type="checkbox"/> Discuss the pathogenesis, morphology and clinical features of Granulomatous diseases <b>(K)</b>	<b>Granulomatous diseases</b>	LGIS 50 MINS	MCQs
8.	<input type="checkbox"/> Define pneumonia <input type="checkbox"/> Classify pneumonia <input type="checkbox"/> Discuss the morphology, pathogenesis, clinical, and diagnostic features of Pulmonary Infections <input type="checkbox"/> Briefly discuss aspiration pneumonia and lung abscess <b>(K)</b>	<b>Pulmonary Infections (Pneumonia)</b>	LGIS 50 MINS	MCQs
9.	<input type="checkbox"/> Define Pulmonary tuberculosis <input type="checkbox"/> Discuss the epidemiology, pathogenesis, clinical features and morphology of various types of pulmonary tuberculosis (Primary, Secondary, Extrapulmonary) <b>(K)</b>	<b>Pulmonary tuberculosis</b>	LGIS 50 MINS	MCQs
10.	<input type="checkbox"/> Classify lung tumours according to WHO <input type="checkbox"/> Discuss the risk factors, pathogenesis, morphology, clinical features of lung tumours <input type="checkbox"/> Briefly discuss the staging & grading of carcinoma <b>(K)</b>	<b>Lung Tumours (Squamous cell carcinoma, small cell carcinoma, adenocarcinoma, large cell carcinoma)</b>	LGIS 50 MINS	MCQs
11.	<input type="checkbox"/> Briefly discuss pleural effusion and pneumothorax <input type="checkbox"/> Discuss the pathogenesis, morphology and clinical course of pleural tumours <b>(K)</b>	<b>Pleural pathology (pleural effusion, Pneumothorax, pleural tumours)</b>	LGIS 50 MINS	MCQs
12.	<input type="checkbox"/> Define Pulmonary vascular diseases <input type="checkbox"/> List the risk factors of pulmonary vascular diseases <input type="checkbox"/> Discuss the pathogenesis, morphology and clinical features of pulmonary vascular diseases <b>(K)</b>	<b>Pulmonary vascular diseases</b>	LGIS 50 MINS	MCQs
13.	<b>MICROBIOLOGY</b> <input type="checkbox"/> List the bacteria causing typical and atypical pneumonia <input type="checkbox"/> Discuss the properties, transmission, epidemiology, & pathogenesis of Streptococcus pneumoniae <input type="checkbox"/> Describe clinical findings and laboratory diagnosis of Streptococcus pneumoniae <input type="checkbox"/> Discuss treatment and prevention of Streptococcus pneumoniae <input type="checkbox"/> List the fungus causing pneumonia <input type="checkbox"/> Briefly discuss Aspergillus <b>(K)</b>	<b>Bacteria and fungi causing pneumonia</b>	LGIS 50 MINS	MCQs

14.	<input type="checkbox"/> Discuss the important properties, transmission, epidemiology, pathogenesis of M. Tuberculosis <input type="checkbox"/> Describe clinical findings and laboratory diagnosis of M. Tuberculosis <input type="checkbox"/> Discuss treatment and prevention of M. Tuberculosis <input type="checkbox"/> Briefly describe Atypical mycobacteria <b>(K)</b>	<b>Mycobacterium tuberculosis</b>	LGIS 50 MINS	MCQs
15.	<input type="checkbox"/> Discuss the properties, transmission, epidemiology, pathogenesis of Gram-positive rods <input type="checkbox"/> Describe their clinical findings and laboratory diagnosis <input type="checkbox"/> Discuss treatment and prevention of infections due to Corynebacterium diphtheriae and Listeria monocytogenes, Bacillus and Clostridium <b>(K)</b>	<b>Gram positive rods (Corynebacterium diphtheriae and Listeria monocytogenes, Bacillus and clostridium)</b>	LGIS 50 MINS	MCQs
16.	<input type="checkbox"/> Discuss the Important properties, Transmission, Epidemiology, pathogenesis of respiratory Gram-negative rods <input type="checkbox"/> Describe clinical findings and laboratory diagnosis of respiratory Gram-negative rods <input type="checkbox"/> Discuss treatment and prevention of respiratory Gram-negative rods <b>(K)</b>	<b>Gram negative rods (Haemophilus, Bordetella, Legionella)</b>	LGIS 50 MINS	MCQs
17.	<input type="checkbox"/> Discuss the Important properties, transmission, epidemiology, pathogenesis of Influenza virus. <input type="checkbox"/> Describe replication cycle, clinical findings and laboratory diagnosis of Influenza virus <input type="checkbox"/> Discuss treatment and prevention of Influenza virus. <b>(K)</b>	<b>Respiratory viruses [Influenza, SARS AND SARS II (COVID 19)]</b>	LGIS 50 MINS	MCQs
18.	<input type="checkbox"/> Discuss the important properties, transmission, epidemiology, pathogenesis of childhood viruses <input type="checkbox"/> Describe replication cycle, clinical findings and laboratory diagnosis of childhood viruses <input type="checkbox"/> Discuss treatment and prevention of childhood viruses <b>(K)</b>	<b>Childhood viruses (Measles, Mumps, Rubella)</b>	LGIS 50 MINS	MCQs
19.	<input type="checkbox"/> Discuss the important properties, transmission, epidemiology, pathogenesis of Parainfluenza virus <input type="checkbox"/> Describe replication cycle, clinical findings and laboratory diagnosis of parainfluenza virus <input type="checkbox"/> Discuss treatment and prevention of parainfluenza virus <input type="checkbox"/> Discuss SARS, SARS II (COVID 19)  <b>(K)</b>	<b>Respiratory virus Parainfluenza (Adeno, Corona, Rhino)</b>	LGIS 50 MINS	MCQs
20.	<input type="checkbox"/> Define atypical pneumonia <input type="checkbox"/> Discuss the important properties, pathogenesis, clinical findings, laboratory diagnosis of Actinomycosis, Mycoplasma and Nocardia <input type="checkbox"/> Discuss treatment and prevention of Actinomycetes and Mycoplasma <b>(K)</b>	<b>Bacteria causing atypical pneumonia (Nocardia, Actinomycetes and Mycoplasma)</b>	LGIS 50 MINS	MCQs

## Pharmacology

## Lectures

S. NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Content	Teaching Activities (Duration)	Assessment
1.	<input type="checkbox"/> Discuss classification, pharmacokinetic and dynamics of drugs used for the treatment & prevention of asthma & COPD <b>(K)</b>	<b>Drugs used to treat bronchial asthma &amp; COPD</b>	LGIS 50 MINS	MCQs
2.	<input type="checkbox"/> Discuss the therapeutic classification of ATT according to WHO <input type="checkbox"/> Describe the mode of action, adverse effects & contraindications of ATT <input type="checkbox"/> Describe the drugs used in multi-drug resistant tuberculosis <input type="checkbox"/> Explain the drug management of extensive multidrug resistant tuberculosis <input type="checkbox"/> Discuss the basic and clinical pharmacology of these agents <b>(K)</b>	<b>Anti-Tuberculous (ATT) &amp; leprosy drugs</b>	LGIS 50 MINS	MCQs
3.	<input type="checkbox"/> Demonstrate the different methods of administration of drugs used in treatment of bronchial-asthma <input type="checkbox"/> Describe their clinical importance <b>(K)</b>	<b>Practical approach to treatment of bronchial-asthma / methods of administration of drugs</b>	LGIS 50 MINS	MCQs
4.	<input type="checkbox"/> Demonstrate the pharmacological action of histamine on animal (Rabbit) bronchial tissue <input type="checkbox"/> Compare Histamine with Salbutamol by using power lab <b>(K)</b>	<b>Activity of histamine on animal (Rabbit) tissue</b>	LGIS 50 MINS	MCQs

## Forensic Medicine

## TUTORIALS

S. NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Contents	Teaching Activities (Duration)	Assessment
1.	<input type="checkbox"/> Describe the mode of action, signs and symptoms, treatment, post-mortem findings and medico legal aspects of CO <sub>2</sub> & sewer gas poisoning <b>(K)</b>	<b>Toxicology- Irrespirable /Asphyxiants gases I (CO<sub>2</sub> &amp; Sewer gas poisoning)</b>	SGD 90 MINS (Tutorial)	MCQs

2.	<input type="checkbox"/> List the sources of Carbon monoxide <input type="checkbox"/> Describe the mode of action, signs and symptoms, treatment, post-mortem findings and medico legal aspects of Carbon monoxide and hydrogen Sulphide poisoning <input type="checkbox"/> Classify war gases <input type="checkbox"/> Describe lacrimators and their treatment  <b>(K)</b>	<b>Toxicology-Irrespirable/Asphyxiants gases II (Carbon monoxide, Hydrogen sulphide and War gases poisoning)</b>	SGD 90 MINS (Tutorial)	MCQs
3.	<input type="checkbox"/> List the sources of Aluminium phosphide and Paraquat <input type="checkbox"/> Describe the mode of action, signs, symptoms, treatment, post-mortem findings and medico legal aspects of Aluminium phosphide and Paraquat poisoning  <b>(K)</b>	<b>Toxicology-Aluminium Phosphide &amp; Paraquat poisoning</b>	SGD 90 MINS (Tutorial)	MCQs
4.	<input type="checkbox"/> Describe the mode of action, signs, symptoms, treatment, post-mortem findings and medico legal aspects of Naphthalene poisoning  <b>(K)</b>	<b>Toxicology Naphthalene Poisoning</b>	SGD 90 MINS (Tutorial)	MCQs

## Pharmacology

## Tutorials

S. NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Contents	Teaching Activities (Duration)	Assessment
1.	<input type="checkbox"/> Discuss classification, pharmacokinetic and dynamics of drugs used for the treatment & prevention of asthma & COPD  <b>(K)</b>	<b>Drugs used to treat bronchial asthma &amp; COPD</b>	SGD 90 MINS (Tutorial)	MCQs
2.	<input type="checkbox"/> Discuss the therapeutic classification of ATT according to WHO <input type="checkbox"/> Describe the mode of action, adverse effects & contraindications of ATT <input type="checkbox"/> Describe the drugs used in multi-drug resistant tuberculosis <input type="checkbox"/> Explain the drug management of extensive multidrug resistant tuberculosis <input type="checkbox"/> Discuss the basic and clinical pharmacology of these agents  <b>(K)</b>	<b>Anti-Tuberculous (ATT) &amp; leprosy drugs</b>	SGD 90 MINS (Tutorial)	MCQs

3.	<b>Anti-Tussives &amp; Mucolytics (Expectorants)</b> <input type="checkbox"/> Describe Anti-tussive & Mucolytic drugs <input type="checkbox"/> Discuss their role in respiratory diseases <input type="checkbox"/> Discuss their basic and clinical pharmacology  <b>(K)</b>	<b>Anti-Tussives &amp; Mucolytics (Expectorants)</b>	SGD 90 MINS (Tutorial)	MCQs
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## Pathology

## Practical

S. NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Contents	Teaching Activities (Duration)	Assessment
1.	<input type="checkbox"/> Discuss histopathology of Chronic Obstructive Pulmonary Disease <b>(S)</b>	<b>Histopathology of Chronic Obstructive Pulmonary Disease (COPD)</b>	Demonstration 90 mins	OSPE
2.	<input type="checkbox"/> Discuss aetiology and morphology of pneumonia  <b>(S)</b>	<b>Histopathology of pneumonia</b>	Demonstration 90 mins	OSPE
3.	<input type="checkbox"/> Discuss detailed morphology and pathogenesis of Pulmonary Tuberculosis  <b>(S)</b>	<b>Histopathology of Pulmonary Tuberculosis</b>	Demonstration 90 mins	OSPE
4.	<input type="checkbox"/> Discuss aetiology, morphology and manifestations of lung tumours <b>(S)</b>	<b>Pathology of lung tumours</b>	Demonstration 90 mins	OSPE

**PHARMACOLOGY****Practical**

S. NO.	LEARNING OBJECTIVES By the end of module, the students should be able to	Content	TEACHING Activities (Duration)	ASSESSMENT
	<input type="checkbox"/> Demonstrate the different methods of administration of drugs used in treatment of bronchial-asthma <input type="checkbox"/> Describe their clinical importance  <b>(S)</b>	<b>Practical approach to treatment of bronchial-asthma / methods of administration of drugs</b>	Demonstration 90 mins	OSPE
	<input type="checkbox"/> Demonstrate the pharmacological action of histamine on animal (Rabbit) bronchial tissue <input type="checkbox"/> Compare Histamine with Salbutamol by using power lab  <b>(S)</b>	<b>Activity of histamine on animal (Rabbit) tissue</b>	Demonstration 90 mins	OSPE

# **Week 4**

**End of Respiratory Module II**

**Respiratory Module 2 Test Theory**

**Respiratory Module 2 Test**

## Medical Education

## Lectures / Workshop

S.NO	Learning Objectives (domain) At the end of session, student will be able to:	Content Areas	Teaching Activity (Duration)	Assessment
1.	<b>Introduction to Medical Education</b> <ul style="list-style-type: none"> <li>Appreciate the journey of medical education from learning biomedical to clinical science. <b>(K)</b></li> </ul>	<ul style="list-style-type: none"> <li>Plan of medical education in college</li> <li>Organization of undergraduate medical curriculum</li> <li>Integrated Curriculum</li> </ul>	LGIS 50 mins	–
2.	<b>Skills of Succeeding in a Medical College – 1</b> <ul style="list-style-type: none"> <li>Describe the methods of learning knowledge in a medical college. <b>(K)</b></li> </ul>	<ul style="list-style-type: none"> <li>Difference in teaching and learning in school / college and a medical institution</li> <li>Learning knowledge</li> <li>Learning skills</li> </ul>	LGIS 50 mins	–
3.	<b>Problem – based Learning</b> <ul style="list-style-type: none"> <li>Describe the basis of problem – based learning. <b>(K)</b></li> <li>Follow the process / steps of problem – based learning session. <b>(S)</b></li> </ul>	<ul style="list-style-type: none"> <li>Basics of problem-based learning</li> <li>Process / steps of problem – based learning</li> <li>Practical demonstration of PBL session</li> </ul>	Workshop (2 hours)	–
4.	<b>Medical Professionalism</b> <ul style="list-style-type: none"> <li>Describe the basics of medical professionalism and outline the behavioral descriptors of students. <b>(K)</b></li> </ul>	<ul style="list-style-type: none"> <li>History of medical professionalism</li> <li>Principals of medial professionalism</li> <li>Behaviors required from medical students</li> </ul>	LGIS 50 mins	–

**Learning resource:** How to succeed at medical school, Dason Evans & Jo Brown, 2009



# TIME TABLES

**Jinnah Medical & Dental College**  
**MBBS I - Batch 24 (2021)**  
**RESPIRATORY I MODULE - WEEK 2**

Lecture Venue: LH101

MON Aug 2	8:30-9:20 ANATOMY Diaphragm: Gross & Embryology)	9:25-10:15 PHYSIOLOGY Pulmonary Circulation V/Q Relationship Dr. Sadaf	10:45-11:35 ANATOMY Thoracic Wall & Respiratory Movements	12:00-1:30 BIOCHEMISTRY PRACTICAL pH Meter DEF-WET LAB A: SR302-Anatomy Tutorial 1 B: Skills Lab-1 <sup>st</sup> Aid-CM C: SR106-Physiology Tutorial 1	SELF STUDY
TUES Aug 3	8:30-10:00 DEF – Professional Communication A: Skills Lab-1 <sup>st</sup> Aid-CM B: SR104 Physiology Tutorial 1 C: AM-Anatomy Tutorial 1	10:15-11:05 PHYSIOLOGY Diffusion of Gasses Dr. Sara	11:10-12:00 ANATOMY Intercostal Space Neurovasculature	12:00-1:30 BIOCHEMISTRY PRACTICAL pH Meter ABC-WET LAB D: SR302-Anatomy Tutorial 1 E: Skills Lab-1 <sup>st</sup> Aid-CM F: SR106-Physiology Tutorial 1	SELF STUDY
WED Aug 4	8:30-10:00 ABC – Professional Communication D: Skills Lab-1 <sup>st</sup> Aid-CM E: SR104-Physiology Tutorial 1 F: AM-Anatomy Tutorial 1	10:15-11:05 ANATOMY Mediastinum Superior & Anterior	11:10-12:00 BIOCHEMISTRY Regulation Acid Base Balance	12:00-1:30 PHYSIOLOGY PRACTICAL Spirogram DEF-DRY LAB A: SR106-Physiology Tutorial 1 B: SR302-Anatomy Tutorial 1 C: Skills Lab-1 <sup>st</sup> Aid-CM	SELF STUDY
THUR Aug 5	8:30-9:20 PHYSIOLOGY O <sub>2</sub> Transport Dr. Sadaf	9:25-10:15 ANATOMY Posterior Mediastinum 1	10:45-11:35 PHYSIOLOGY O <sub>2</sub> Hb Dissociation Curve Dr. Sadaf	12:00-1:30 PHYSIOLOGY PRACTICAL Spirogram ABC-DRY LAB D: SR106-Physiology Tutorial 1 E: SR302- Anatomy Tutorial 1 F: Skills Lab-1 <sup>st</sup> Aid-CM	SELF STUDY
FRI Aug 6	8:30-9:20 PHYSIOLOGY CO <sub>2</sub> Transport Dr. Sadaf	9:25-10:15 ANATOMY Posterior Mediastinum 2	10:45-11:35 BIOCHEMISTRY Respiratory pH Disturbance	11:40-12:30 ANATOMY Pleura & Related Diseases	SELF STUDY

**Jinnah Medical & Dental College**  
**MBBS 3 - Batch 22 2021**  
**RESPIRATORY MODULE-Week 1**

Lecture Venue: JMDC LH 103; Monday, Tuesday, Saturday: LH1 & LH 2 Korangi

MON 28 June	CLINICS (Rotation 11; Week 1) (9:00 – 12:00)			12:10-1:00 COMMUNITY MEDICINE Pneumoconiosis & Prevention Dr. Shagufta	1:10-2:00 FORENSIC MEDICINE Asphyxia I Dr. Firashah	SELF STUDY
TUES 29 June	CLINICS (Rotation 11 ; Week 1 ) (9:00 – 12:00)			12:10-1:00 COMMUNITY MEDICINE Air Pollution Dr. Faryal	1:10-2:00 FORENSIC MEDICINE Asphyxia II Dr. Firashah	SELF STUDY
WED 30 June	8:30-9:20	9:25-10:15	10:45-11:35	12:00-1:30	1:45-3:15	
	PATHOLOGY Congenital Anomalies, Atelectasis & Pulmonary Edema	PHARMA Drugs for Asthma & COPD I Dr. Samia	PATHOLOGY ARDS & ALI	PBL 1.1 D: SR106 E: SR303 F: SR305 PHARMA PRACTICAL Asthma Drug Administration ABC-Path Museum	PBL 1.1 A: SR106 B: SR303 C: SR305 PATHOLOGY PRACTICAL Histopathology COPD DEF-DRY LAB	
THURS 1 July	PATHOLOGY Obstructive Lung Disease I	PHARMA Drugs for Asthma & COPD II Dr. Samia	PATHOLOGY Obstructive Lung Disease II	PBL 1.2 (12:20-1:30) A: SR106 B: SR303 C: SR305 PHARMA PRACTICAL Asthma Drug Administration DEF-Path Museum	PBL 1.2 D: SR106 E: SR303 F: SR305 PATHOLOGY PRACTICAL Histopathology COPD ABC-DRY LAB	
FRI 2 July	PATHOLOGY Pneumoconiosis	PATHOLOGY Chronic Interstitial Restrictive Lung Diseases	PATHOLOGY Granulomatous Lung diseases (Sarcoidosis)	11:40-12:30 PATHOLOGY Pulmonary Infections (Pneumonia)		
SAT 3 July	CLINICS (Rotation 11; Week 1) (9:00 – 12:00)			12:10-1:00 MEDICINE PBL 1.3		

**TRANSPORT WILL LEAVE JMDC FOR KORANGI AT 8:15 AM MONDAY, TUESDAY, SATURDAY**