

KING EDWARD MEDICAL UNIVERSITY LAHORE.

**Faculty of Basic Sciences
MBBS Program Curriculum**

Course Title: Respiratory System Module

DURATION 15 days (02-03-2015 to 21-03-2015)
CONTACT HOURS Lectures 34 hrs+ PBL sessions 09hrs+ Demonstrations /SGd/ Tutorials/ Practicals 28 hrs

CREDIT HOURS 71 hrs
3.2 credit hours
TEACHING METHODOLOGIES Lectures/Practical/ Tutorials/ Small Group Discussion/ Problem Based Learning

- Three lectures/day of 1 Hour each .Two lectures per Friday
 - 1st lecture 8-9 AM
 - 2nd lecture 9.00-10.00 AM
 - First Break 10.00-10.30 AM
 - 3rd lecture lecture 10.30-11.30 AM
 - Practical/tutorial/GD/PBL 11.30 onwards
- Practical / Group Discussion/ Tutorials 6 day a week in 6 batches
- PBL sessions will be conducted simultaneously in the Anatomy, Physiology and Biochemistry departments.

Objectives:

Upon completion of this course, students should be able to:

1. Describe the normal structure / function relationships of respiratory system
2. .Describe the integrated role of musculoskeleton, lung pressures and volumes, lung compliance and airway resistance in the mechanics of breathing and
3. Have knowledge of associated diseases.
4. Describe the histological structure and function of respiratory membrane, its role in diffusion of gases into blood and effect of decrease/loss of function of this membrane in acute and chronic diseases affecting Lung Parenchyma.
5. Describe the different mechanism for transport of Oxygen and Carbon Dioxide in blood.
6. Know and apply the knowledge of anatomy and physiology of neural center and carotid and aortic bodies for controlling the mechanism of respiration and have knowledge of abnormal types of respiration associated with damage/derangement of these centers.
7. Understand the clinical effects of diseases and their treatment with mechanism of action pharmacokinetics, uses and adverse effects of commonly used drugs.
8. Apply the basic scientific knowledge in understanding the respiratory adjustments in health and in disease states
9. Describe the physiological basis of signs / symptoms of altered structure & function of respiratory system
10. Interpret the results of respiratory investigations in the underlying derangements
11. Outline the physiological principles of treatment of common respiratory disorders
12. Provide Cardiopulmonary Resuscitation in the event of cardio –respiratory arrest
13. Recognize the risk factors and preventive measures of Respiratory diseases.

WEEK 1

TIME		COURSE CONTENT	LEARNING OUTCOMES	RECOMMENDED BOOKS	DEPARTMENT	DURATION	VENUE
DAY 1		MONDAY		02.03.2015			
8-9	1	An overview of the structure of respiratory system.	1-Describe the general structures and organs of the respiratory system. 2. Compare and relate the structure and function of different parts of the respiratory system. 3. Describe the anatomical and functional subdivisions of the RS. 4. Describe the structure of nasal cavity including nasal septum. 5. Locate the openings of the paranasal air sinuses and naso-lacrimal duct in the meatuses. 4. Describe nasal innervations, blood supply, and its relation to epistaxis	CD/ Internet	Anatomy Dr Sohail	1 hr lecture	Old Auditorium
9-10	2	Introducing the physiology of nose and respiratory passages	1. Define pulmonary ventilation 2. Differentiate external and internal respiration 3. Describe the branching pattern of airways from conducting to respiratory zones 4. Understand the air conditioning, airway resistance, effect of autonomic nerve stimulation and local factors on bronchial smooth muscle. 5. Physiology and significance of cough and sneeze reflex	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Mehr Un Nisa	1 hr lecture	Old Auditorium
Break 10-10.30							
10.30-11.30	3	Histological features of respiratory epithelium, Nasal cavity, paranasal sinuses, trachea bronchi and bronchioles.	1. Identify different parts of resp tract. 2. Correlate structure of mucosa with its functions. 3. Enumerate the cells of resp. epithelium and olfactory mucosa with their functions. 4. Define metaplasia and apply this to changes in resp. epithelium	Basic Histology by Junqueira	Histology Lec 1 Dr Mahjabeen	1 hr Lecture	Old Auditorium
11.30-1:30	4	Microscopic anatomy of upper respiratory tract.	Identify the microscopic structure of upper respiratory tract including nasal mucosa, larynx, nasopharynx.	Basic Histology by Junqueira	Histology Prac in 3 Batches A, B & C	2 Hr Practical	Anatomy

DAY 2 TUESDAY 03.03.2015							
8-9	5	Respiratory system 1 Formation of respiratory diverticulum. Development of larynx trachea and bronchi Tracheoesophageal fistulas	1. Explain the origin & time of appearance of lung bud. 2. Describe the formation of tracheobronchial tree 3. Enumerate and draw the diagrams of trachea esophageal fistulas.	Langmans Medical Embryology Developmental embryology by Keith L. Moore	Embryo Lec 1 Prof Raafea Tafweez	1 hr Lecture	Old Auditorium
9-10	6	Pulmonary ventilation I	1. Understand differences between anatomic and physiologic dead spaces and their measurements. 2. Know the difference between pulmonary and alveolar ventilation. Rates. 3. Describe the effect of dead space on alveolar ventilation..	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Imrana Ihsan	1 hr Lecture	Old Auditorium
Break 10-10.30							
10.30-11.30	7	Pulmonary ventilation II	1. Understand differences between anatomic and physiologic dead spaces and their measurements. 2. Know the difference between pulmonary and alveolar ventilation. Rates. 3. Describe the effect of dead space on alveolar ventilation..	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Imrana Ihsan	1 hr Lecture	Old Auditorium
11.30-12.30	8	An overview of bacterial and viral infections of the upper respiratory tract. Injury to the mucociliary apparatus.	1. Know the normal flora and the pathogens of the respiratory tract. The significance in relationship to antibiotics abuse. 2. Effect of cigarette smoke or gaseous inhalation on respiratory mucosa. 3. Describe the significance of vaccination, the target groups that should be vaccinated, frequency, and side effects.	Robbins pathology.	Pathology Dr Jalees Khalid Khan	1 hr Lecture	Old Auditorium
12.30-1.30	9	Microscopic anatomy of trachea	Identify the slide of trachea and main bronchi and draw and label their histologic features	Basic Histology by Junqueira	Histology Prac in 3 Batches A,B&C	2 Hr Practical	Anatomy
DAY 3 WEDNESDAY 04.03.2015							
8-10	10	Thoracic cage 1. Features of typical ribs Identification of atypical ribs Anatomy of first and second rib	1. Identify typical and atypical ribs, describe features of typical ribs. 2. Differentiate between right and left ribs. 3. Describe relations of first rib and structures attached to 1 st and 2 nd ribs. Cervical rib	Snell's clinical Anatomy Clinically oriented anatomy by Keith L. Moore	Gross Anatomy in Respective Batches	Demo 1 hr SGD 1 Hr	Dissection Hall Anatomy

Break 10:00 -10:30							
10.30-11.30	11	Development of diaphragm and its anomalies	Define septum transversum and name its derivatives. Role of septum transversum,pleuroperitoneal membranes,dorsal mesentery of esophagus,and mesenchyme of body wall in the development of diaphragm. Causes of various anomalies of diaphragm..	Langmans Medical Embryology Developmental embryology by Keith L. Moore	Embryo Lect II Prof Rafeea Tafwweez	1 hr Lect.	Old Auditorium
11.30-1.30	12	Wet spirometry	1.Understand the principle,procedure,precaution and clinical importance of this test. 1.. Define spirometry 2. Describe the significance of the major volume and capacities that are recorded during normal function test. 3.Describe the physiological and pathological variations in these.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physio Prac in 3 Batches A,B&C Dr Shahid Saeed Dr Mubashir Dr Rana Khurram Dr Sheena Tariq	2 Hr Practical	Physiology labs
DAY 4 THURSDAY 05.03.2015							
8-10	13	Thoracic cage 2 Vertebrae and Sternum.	Identify typical and atypical thoracic vertebrae and describe their features. Name various parts of sternum and describe their relations. Describe the ossification of sternum.	Snell's clinical Anatomy Clinically oriented anatomy by Keith L. Moore	Gross Anatomy in respective Batches	Demo 1hr SGD 1 Hr	Dissection Hall
Break 10:00-10:30							
10.30-11.30	14	Applied anatomy of ribs and sternum.	Explain the common site of rib fracture and its complications. Describe flail chest. Understand the indications types and approach for thoracotomy. Bone grafting.cervical rib. Sternal fractures, biopsy and anomalies.	Clinically oriented Anatomy by Keith L.Moore.	TB&CD Department Dr Muhammad Younas	1 Hr Lecture	Old Auditorium
11.30-12.30	15	Lung volumes and capacity	Understand algebraic interrelations among pulmonary volumes and capacities Define FRC,FEV1,FVC, Explain the significance and clinical utility of FEV1 and FEV1/FVC ratio Describe the method used to measure FRC.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Mehr Un Nisa	1 Hr Lecture	Old Auditorium

12.30-2.30	16	1-PBL-3 clinical case scenario. 1-1.Bronchial asthma.2.Bronchitis 3.Influenza 4.Flail chest (3 min each)	Apply their knowledge of Pulmonary Function testing to differentiate between Obstructive and Restrictive lung diseases. Have basic understanding of respiratory dysfunction in acute resp.infections and musculoskeleton in resp.illness.	BRS physiology USMLE step I	Internal Medicine Dr Uzma Malik	2 hr PBL	Old Auditorium
DAY 5 FRIDAY 06.03.2015							
8-10	17	Thoracic cage 3 Joints and movements of thoracic cage.	Describe the name,type,articulation and ligaments of the joints of thoracic wall. Describe the dislocation and separation of ribs. Describe the mechanism of bucket handle and pump handle movements.	Snell's clinical Anatomy Clinically oriented anatomy by Keith L. Moore	Gross Anatomy in respective Batches	Demo 1 hr SGD 1 Hr	Dissection Hall
Break 10:00-10.30							
10.30-12.30	18	Stethography.	1.Perform stethography in a given subject. 2.identify and interpret the effects of breath holdin,exercise,deglutition,coughing and sneezing,talkin,laughing,and valsalva's maneuver Record resp rate and duration of insp and exp.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Prac in 3 Batches Dr M Shahid Saeed Dr Mubashir Abbas Dr Rana Khurram Dr Sheena Tariq	2 Hr Practical	Physiology Labs
DAY 6 SATURDAY 07.03.2015							
8-10	19	Intercostal spaces	1.name typical and atypical spaces 2.describe the muscles forming various layers of thoracic wall 3.dissection and naming of their contents 4.location of neurovascular bundles and their relation to one another. 5.apply this knowledge to clinical conditions 6.surface anatomy and radiology of intercostal spaces.	Snell's clinical Anatomy Clinically oriented anatomy by Keith L. Moore	Gross Anatomy in Respective Batches	Demo 45 min video 30 min dissection 1 Hr	Dissection Hall

Break 10:00 -10.30							
10.30-11.30	20	Mechanics of respiration.1 The muscles involved and their nervous control.	1.describe the role of diaphragm in normal quiet breathing. 2.describe muscles involved in labored breathing and exercise. 3.explain the site and components of respiratory center and function of each component. 4.Understand the concept of pacemaker of DRG neurons , inspiratory ramp ,,braking effect.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Imrana Ihsan	1 Hr lecture	Old Auditorium
11.30-1.30	21	2-PBL.3 case scenario of 1.GBS 2.Myesthenia Gravis 3.Kyphoscoliosis.	Explain the role of Mechanics and nervous system in Ventilation.	BRS physiology USMLE step I	Int Medicine Dr Imrana Mahfooz Khan	2 hr PBL	Old Auditorium
DAY 7 MONDAY 09.03.2015							
8-10	22	Neurovascular bundles and venous drainage of thoracic wall	Give formation and drainage of azygos system Venous drainage of intercostal spaces Dissect the azygos vein in the posterior and superior mediastinum to understand its relation.Know about use of intercostal nerve block.	Snell's clinical Anatomy Clinically oriented anatomy by Keith L. Moore	Gross Anatomy in Respective Batches	Demo 1 hr Dissection 1 hr	Dissection hall
Break 10:00-10.30							
10.30-11.30	23	Mechanics of respiration 2 Changes in lung pressures and volume during normal breathing.	Define alveolar, pleural and trans pulmonary pressures and describe their normal values. Learn the pressure volume relationship during breathing. Learn the physiologic basis of these negative pressures. Draw and label the diagram of resp. cycle.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Imrana Ihsan	1 hr Lecture	Old Auditorium
11.30-1.30	24	Perform the examination of resp sys on given subject.	Apply the previous knowledge to examine the subject provided to you and record the findings.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Prac in 3 Batches Dr Shahid Saeed Dr Mubashir Dr Rana Khurram Dr Sheena Tariq	2 hr practical	Physiology Labs
DAY 8 TUESDAY 10.03.2015							
8-10	25	Parietal and visceral pleura Parts of parietal pleura	Define parietal and visceral pleura and pleural cavities.	Snell's clinical Anatomy Clinically oriented anatomy by Keith	Gross Anatomy in respective Batches	Demo 1 hr SGD 1 hr	Dissection Hall

		Lines of pleural reflections Costodiaphragmatic and costomediastinal recesses Nerve and blood supply of pleura.	Mark on cadavers the arrangement of pleura relative to the lungs(costal,mediastinal and vertebral lines of pleural reflections Learn the importance of cd and cm recesses in health and disease. Correlate the difference of nerve supply of V and P pleura to their embryological origin.	L. Moore				
Break 10:00 – 10.30								
10.30-11.30	26	Development of pleural cavity & intraembryonic coelomic cavity& its derivatives..	Describe the formation of intraembryonic coelomic cavity, its derivatives . Learn the formation of primitive and definitive pleural cavities.		Embryo Lect III Prof Rafeea Tafweez	1 hr Lecture	Old Auditorium	
11.30-1.30	27	Basic knowledge of pleural injuries resulting in pneumothorax, pleral effusion, hemothorax and pleuritis. Techniques like thoracocentesis, insertion of chest tube, thoracoscopy,pleurectomy.	Understand the mechanism of development of these pathologies. Describe various techniques used in their treatments.	Clinically oriented Anatomy by Keith L.Moore.	TB&CD Dr M. Khalid	2 hr Video	Old Auditorium	
DAY 9 WEDNESDAY 11.03.2015								
8-10	28	Tracheobronchial tree. Extent and relations of trchea Right and left principle bronchi Bronchopulmonary segment	Mark the beginning and bifurcation of trachea on cadaver Dissect and describe relations of trachea Differentiate left and right bronchi Name different subdivisions of bronchial tree Define bronchopulmonary segments and give their clinical significance.	Snell's clinical Anatomy Clinically oriented anatomy by Keith L. Moore	Gross Anatomy in Respective Batches	Demo 30 min Dissection 1.5 hr	Dissection Hall	
Break 10:00 -10.30								
10.30-11.30	29	Mechanics of respiration 3 Lung compliance Factors like thoracic cage and surfactant affect lung compliance. Work of breathing.	Learn the definition, formula,diagram, and effect of presence and absence of surfactant on lung compliance. Know about surfactant .and Laplace's law. Explain the difference between compliance and elasticity. Describe the compliance work, tissue resistance work and airway resistance work.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Imrana Ihsan	1 hr lecture	Old Auditorium	

11.30-12.30	30	Respiratory bronchioles, alveoli, alveolar septum, blood supply and lymphatic drainage	Describe the subdivisions and layers of respiratory tract. Learn the alveolar epithelial cells and their functions. Define and tell the components of blood-air barrier. Explain the significance of alveolar pores.	Basic Histology by Junquirra	Histology Lect II Dr Mahjaben	1 hr lecture	Old Auditorium
12.30-2.30	31	Investigation techniques for reparatory system.	Have basic knowledge of CXR, CT scan, and pulmonary function tests. Can identify important landmarks on CXR and CT or MRI.	Clinically oriented Anatomy by Keith L. Moore.	TB&CD Dr Afshan Qureshi	2hr PBL	Old Auditorium
Day 10 THURSDAY 12.03.2015							
8-10	32	Surfaces borders and fissures of lung. Hilum of lung. Root of lung and pulmonary ligament Blood supply, lymphatic drainage and nerve supply of lung.	1. Differentiate between right and left lung on basis of relations of lung surfaces and other features. 2. Mark on cadaver oblique and horizontal fissures of lungs. 3. Define hilum, root and pulmonary ligament. 4. Identify structures forming nerve roots 5. Draw and label the hilar structures on R & L lungs. 6. Describe the importance of pulmonary ligament.	Snell's clinical Anatomy Clinically oriented anatomy by Keith L. Moore	Gross Anatomy in Respective Batches	Demo 1 hr SGD 1 hr	Dissection Hall
Break 10:00 -10.30							
10.30-11.30	33	Pulmonary circulation. Pulmonary edema.	Learn blood volumes and pressures in various parts of pulmonary circulation. Understand pulmonary wedge pressure and venous admixture, response to hypoxia. Explain three zones of the lung based on blood flow dynamics Explain the pulmonary capillary dynamics and mechanism of development of pulmonary edema..	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Mehr Un Nisa	1 hr lecture	Old Auditorium
11.30-1.30	34	Microscopic anatomy of the lung.	Identify the slide of lung under light microscope. Differentiate between bronchus, bronchiole, respiratory bronchiole, and alveolar ducts. Draw and label the histological features of the lungs.	Basic Histology by Junquirra	Histology Prac in 3 Batches A, B & C	2 hr Practical's	Anatomy

DAY 11 FRIDAY 13.03.2015							
8-9	35	Physical principles of gas exchange Diffusion of oxygen and carbondioxide through the respiratory membrane.	Develop a concept of partial pressure of gases. Know the composition of alveolar air and atmospheric air. Define Henry's Law. Describe the structure of respiratory membrane. Describe the factors that affect the gas diffusion through this membrane. Define ventilation –perfusion ratio	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Mehr Un Nisa	1 hr lecture	Old Auditorium
9-10	36	Effect of ventilation-perfusion ratio on alveolar gas concentration..	Build a clear concept of physiologic shunt and physiologic dead space when V_A/Q ratio changes in various conditions.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of Physiology.	Physiology Dr. Mehr Un Nisa	1 hr lecture	Old Auditorium
Break 10:00 -10.30							
10.30-12.30	37	PBL Case scenario1.Pulmonary oedema.2.Pulm embolism	Explain the application of Arterial Blood Gas Analysis in understanding Hypoxia due to AV shunts, pulmonary edema	BRS physiology USMLE step I	Medicine Dr Naeem Afzal	2 hr PBL	Old Auditorium
DAY 12 SATURDAY 14.03.2015							
8-9	38	Development and maturation of lungs	Enumerate the different stages of maturation of lungs.	Lang mans Medical Embryology Developmental embryology by Keith L. Moore	Embryolgy Lec IV Prof Rafeea Tafweez	1 hr lecture	Old Auditorium
9-10	39	Transport of oxygen in blood and tissue fluids.	Describe the diffusion of O ₂ from alveoli to pulm. Capillaries Describe uptake of o ₂ by pulm blood. Transport of O ₂ in arterial blood Diffusion of O ₂ FROM CAPILLARIES TO TISSUE CELLS Oxy-Hb assoc-dissoc curve and factors shifting it to right or left. Define P50. Define Bohr's effect and Haldane's effect	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Amna Tahir	1 hr lecture	Old Auditorium
Break 10:00 -10.30							

10.30-12.30	40	Acute respiratory distress syndrome.	Have the basic knowledge of mechanism of atelectasis in the absence of surfactant.		Pediatric Medicine Dr. Tahir Javed	2 hr PBL	Old Auditorium
12.30-1.30	41	PBL Pulmonary Tuberculosis	Describe the historical background and basic information of etiology pathophysiology and management of Tuberculosis.	Davidson / PJ Kumar	TB&CD Prof Saqib Saeed	1 Hr PBL	Old Auditorium
DAY 13 MONDAY 16.03.2015							
8-9	42	Transport of carbon dioxide in blood.	Enlist the chemical forms in which CO ₂ is transported. Explain the chloride shift phenomenon Identify transport as carbimino hemoglobin and in dissolved state. CO ₂ dissociation curve. Define haldane's effect Describe changes in blood acidity during CO ₂ transport.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Amna Tahir	1 hr lecture	Old Auditorium
9-10	43	Effect of hemoglobin to buffer the tissue Po ₂ , respiratory acidosis and alkalosis and ABG analysis.	Understands the mechanism by which Po ₂ is nearly maintained in the tissues even at high altitudes or in deep sea by studying the OXY-Hb dissociation curve. Diagnose the acid base balance disturbance by looking at the ABG report.	Text book of Physiology by Guyton & Hall Review of Medical Physiology by W.F.Ganong.	Biochemistry Dr Tehmina Tariq	1 hr lecture	Old Auditorium
Break 10:00 -10.30							
10.30-11.30	44	Lower Respiratory tract insufficiency	Discuss the etiology, pathophysiology, and clinical features of ,Pneumonias . Discuss the causes and manifestations of atelectasis.	Robbins pathology.	Pathology Dr Raana Akhtar	1 hr lecture	Old Auditorium
11.30-1.30	45	PBL A clinical Scenario Acid Base balance in clinical. Environment.	Apply the knowledge to analyze respiratory acidosis and alkalosis and mechanism of homeostasis. Describe type1 and type2 resp. failure	BRS physiology USMLE step I	Medicine Dr Fawad Randhawa	2 hrs PBL	Old Auditorium
DAY 14 TUESDAY 17.03.2015							
8-9	46	Hypoxia	Definition and types of hypoxia with examples. Describe the pathology of CO and Cyanide poisoning and its management Explain the effects of hypoxia on body Role of oxygen therapy in different types of	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Amna Tahir	1 hr lecture	Old Auditorium

			hypoxia.				
9-10	47	High altitude physiology	Discuss the acclimatization to low PO ₂ conditions in detail. Describe the physiologic basis of acute and chronic mountain sickness and their prevention.	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Mehr Un Nisa	1 hr Lecture	Old Auditorium
Break 10:00 – 10.30							
10.30-11.30	48	Breathlessness and mental stress.	Describe the psychiatric aspects of lung diseases.	Latest research articles.	Psychiatry Prof Aftab Asif	1 hr Lecture	Old Auditorium
11.30-1.30	49	An outline of advanced trauma life support program (ATLS)	Do Airway maintenance with spine protection Maintain Breathing and ventilation Control Circulation with hemorrhage control Do Neurologic assessment Provide Exposure and environmental control	Ppt presentation to the whole class.	General Surgery Dr. Khalid Cheema	2 hr session	Old Auditorium
DAY 15 WEDNESDAY 18.03.2015							
8-9	50	Drugs used in treatment of bronchial asthma and their mechanism of action.	Classify bronchodilators and describe their mechanism of action and indication, contra indications.	Basis and clinical Pharmacology (Bertram G. Katzung) Lippincott's Illustrated Reviews of Pharmacology	Pharmacology Dr Ahmad Fawad	1 hr lecture	Old Auditorium
9-10	51	Deep sea physiology	Describe the atmospheric pressure changes with increasing depth. Describe the etiology,pathophysiology,CF, and management of decompression sickness	Guyton and Hall Text book of Medical Physiology. Ganong's Review of medical Physiology.	Physiology Dr. Amna Tahir	1 hr lecture	Old Auditorium
Break 10:00 -10.30							
10.30-11.30	52	Effect of various drugs on bronchial smooth muscle.	Demonstrate the effect of adrenergic and cholinergic drugs on airways in guinea pigs	Practical pharmacology.	Pharmacology practical Dr Ahmad Fawad	2 hr practical	Pharma Labs
11.30-1.30	53	Life Style modification and prevention of occupational lung diseases	Describe the significance of prevention in connection with Cigarette smoking .	Parks Textbook of Preventive and Social medicine	Community Medicine Dr M N Tabassum	1 hr lecture	Old Auditorium

