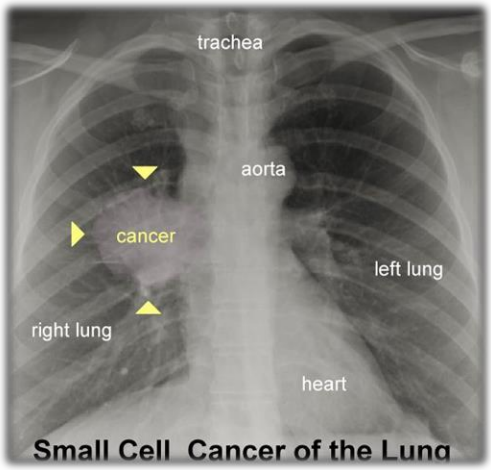
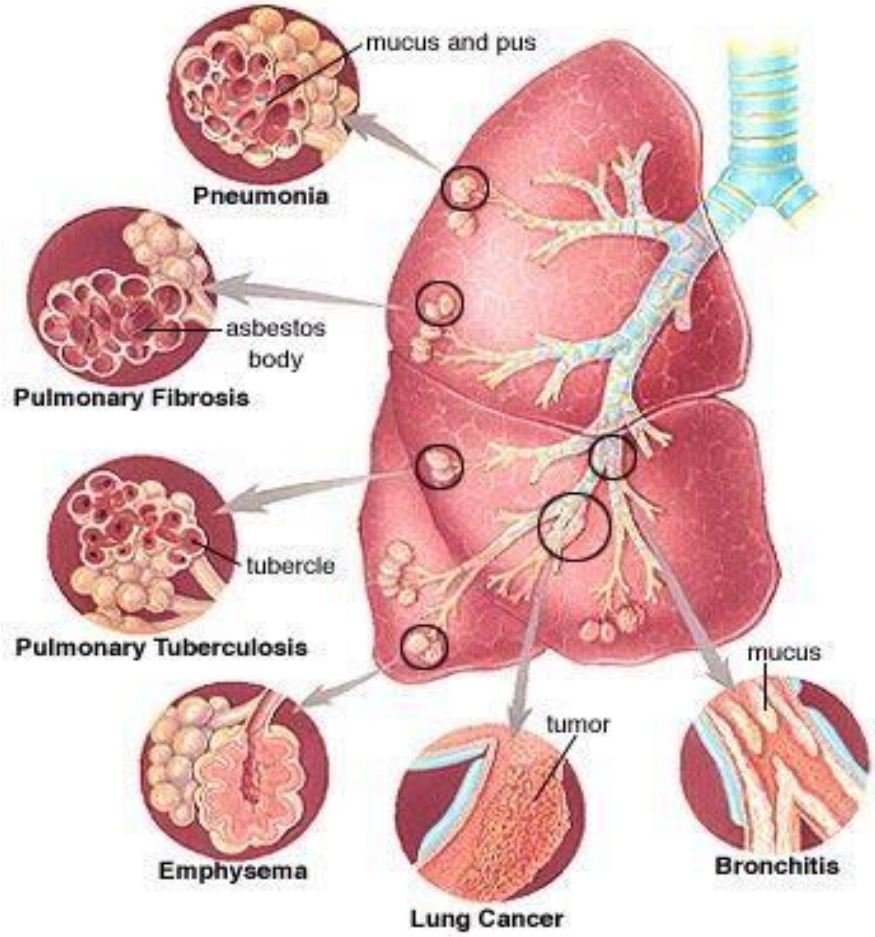

# STUDYGUIDE

## RESPIRATORY II MODULE

## THIRD YEAR MBBS SEMESTER 5

## 4th FEB – 2nd MAR, 2019 4 WEEKS




**LIAQUAT NATIONAL HOSPITAL &**

**MEDICAL COLLEGE**

**2019**

# STUDY GUIDE FOR RESPIRATORY II MODULE

*Module name:* **Respiratory II**

*Semester:* **Five** *Year:* ***Three*** *Duration:* ***4 weeks (Feb - Mar 2019)***

*Timetable hours:* **Lectures, Case-Based Integrated Learning (CBIL), Clinical Rotations, learning experience in LNH outreach centers, Laboratory, Practical, Demonstrations, Skills, Self-Study**

*Credit hours:* **3 credit hours in theory and 1.5 credit hours in practical**

## MODULE INTEGRATED COMMITTEE

| | |
|---|---|
| ***MODULE COORDINATOR:*** | • Dr. Saima Akhter (Coordinator) |
| ***CO-COORDINATORS:*** | • Dr. Mehnaz Umair (DHCE) |

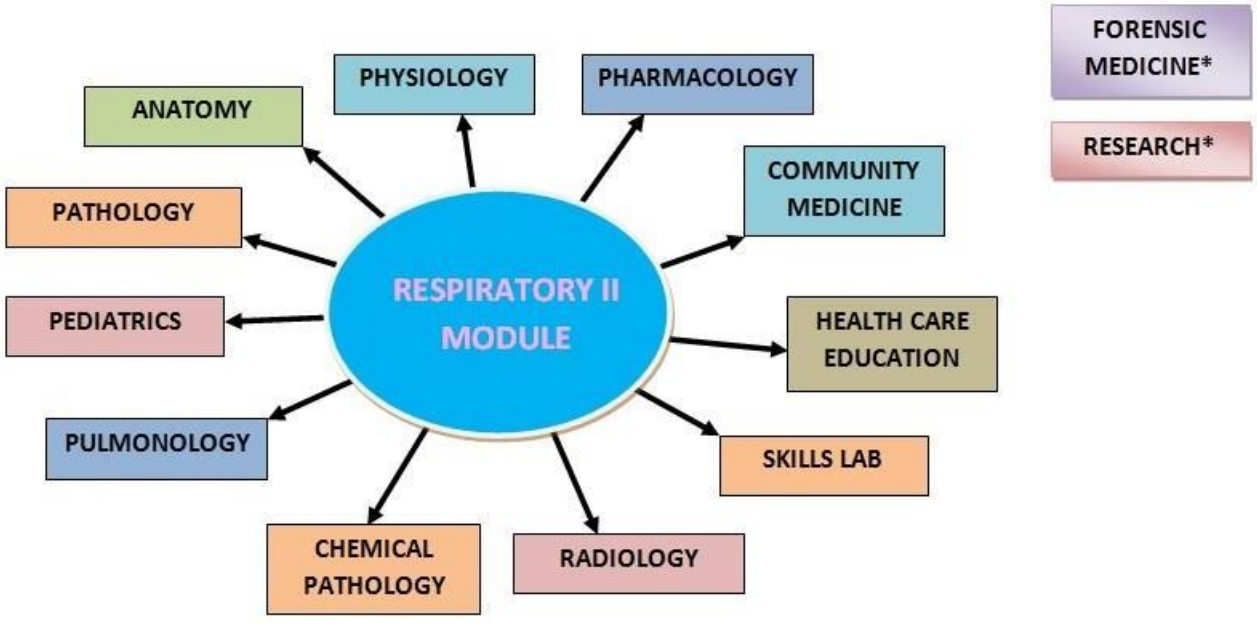
## DEPARTMENTS & RESOURCE PERSONS

| BASIC HEALTH SCIENCES | CLINICAL AND ANCILLARY DEPARTMENTS |
|---|---|
| ***ANATOMY***<br>• Professor Zia-ul-Islam | ***CHEMICAL PATHOLOGY***<br>• Dr. Howrah Ali |
| ***COMMUNITY MEDICINE***<br>• Professor Rafiq Soomro | ***PEDIATRICS***<br>• Prof. Samina Shamim<br>• Dr. Kashif Abbas |
| ***FORENSIC MEDICINE***<br>• Professor Murad Zafar Marri | ***PULMONOLOGY***<br>• Professor Ali Arsalan<br>• Dr. Saima Akhter<br>• Dr. Gulafshan |
| ***PATHOLOGY***<br>• Professor Naveen Faridi<br>• Dr. Amna Khurshid | ***RADIOLOGY***<br>• Dr. Muhammad Ayub Mansoor<br>• Dr. Roomi Mahmud |
| ***PHARMACOLOGY***<br>• Professor Nazir Ahmad Solangi | ***RESEARCH & SKILLS DEVELOPMENT CENTER***<br>• Dr Kahkashan Tahir |
| ***PHYSIOLOGY***<br>• Professor Syed Hafeez-ul-Hassan | ***RESEARCH***<br>• Dr. Shaheena Akbani |
| ***DEPARTMENT of HEALTH CARE EDUCATION***<br>Professor Nighat Huda Dr. Sobia Ali Dr. Afifa Tabassum<br>Dr. Muhammad Suleman Sadiq Dr. Mehnaz Umair | |
| ***LNH&MC MANAGEMENT***<br>Professor K.U. Makki, Principal, LNH & MC<br>Dr. Shaheena Akbani, Director A.A & R.T LNH & MC | |
| ***STUDY GUIDE COMPILED BY: Dr. Mehnaz Umair, Department of Health Care Education*** | |

**CURRICULUM FRAMEWORK**

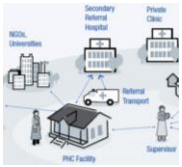
Students will experience *integrated curriculum* similar to previous modules of all 4 semesters**. INTEGRATED CURRICULUM** is comprised of system-based modules such as Infectious Diseases, Hematology, Respiratory system and CVS which links basic science knowledge to clinical problems. Integrated teaching 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.

## INTEGRATING DISCIPLINES OF RESPIRATORY II MODULE




Note: *Forensic Medicine Curriculum & Research will run parallel in 5th and 6th Semester

## LEARNING METHODOLOGIES

| Teaching/Learning Technique | Icons |
|---|---|
| Interactive Lectures |  |
| Clinical learning experiences |  |
| Small Group Sessions |  |
| Case- Based Learning |  |
| Practicals / Skills session |  |
| Simulation-based learning |  |
| Self-Study |  |
| Learning experiences in Outreach medical centers |  |

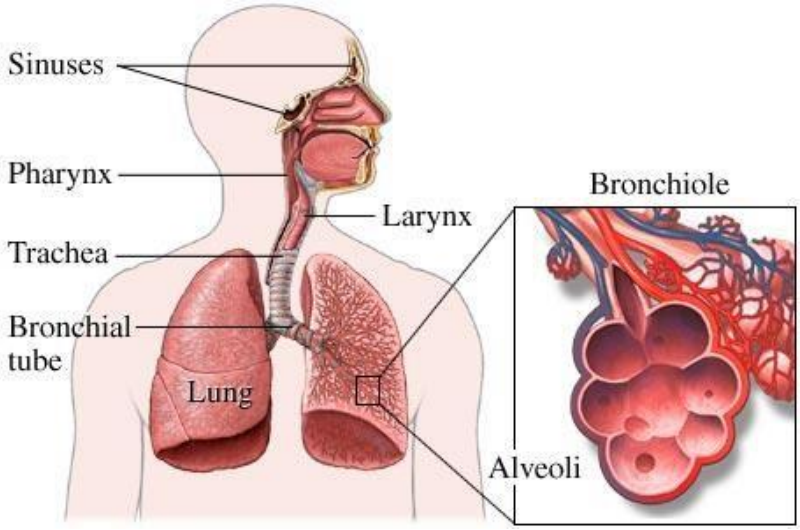
## SEMESTER 5 MODULE 3: RESPIRATORY II

## RATIONALE

The Respiratory System II (RES II) module is designed to consolidate, and build on the Semester II Respiratory I module which covered basic medical sciences concepts for understanding the causes and treatment of diseases.

Tuberculosis is considered to be a major cause of ill health in Pakistan. The annual incidence rate of infectious Tuberculosis cases is estimated to be between 85-100/100,000 persons.[1] The exact prevalence of COPD in Pakistan is not known, but a large number of patients attend outpatient and emergency departments across most of the country. The socioeconomic burden of COPD is considerable. Apart from smoking, urban air pollution is an important cause of COPD.[2] Pakistan at present falls into a low risk lung cancer region in females and a moderate risk region for males and the highest registered increase between 1995 and 2002 was observed in the older age groups (65+).[3]

RES (II) will focus on the respiratory system, its associated diseases, treatment options, and prevention of the diseases such as obstructive lung diseases, hypersensitivity related diseases, pulmonary infections, respiratory failure and restrictive lung diseases. The community medicine learning will aim at sessions on preventive medicine and various program such as TB, DOTS and National tuberculosis control program of Pakistan. The module will enable students to relate their theoretical knowledge to real practice through common clinical presentations, case-based discussions, interactive lectures, patient interactions and simulated-based learning.




1. De Muynck A, Siddiqi S, Ghaffar A, Sadiq H. Tuberculosis control in Pakistan: critical analysis of its implementation. J Pak Med Assoc. 2001 Jan;51(1):41-7.

2. Anwar SK, Mehmood N, Nasim N, Khurshid M, Khurshid B. Sweeper's lung disease: a cross-sectional study of an overlooked illness among sweepers of Pakistan. International journal of chronic obstructive pulmonary disease. 2013; 8:193

3. Bhurgri Y, Bhurgri A, Usman A, Sheikh N, Faridi N, Malik J, Ahmed R, Kayani N, Pervez S, Hasan SH. Patho-epidemiology of lung cancer in Karachi (1995-2002). Asian Pacific journal of cancer prevention. 2006 Jan 25;7(1):60.

## COURSE OBJECTIVES AND STRATEGIES

At the end of the module the students will be able to:

| OBJECTIVES | FACULTY | LEARNING STRATEGY |
|---|---|---|
| **OBSTRUCTIVE LUNG DISEASES *(COPD)*** | | |
| • Perform Respiratory System Examination | Skills Lab & Pulmonology |  |
| • Perform Respiratory System Examination | Pulmonology |  |
| • Take detailed history of patients with respiratory diseases | Pulmonology | |
| • Review clinical anatomy of Thorax including thoracic wall, lungs and trachea-bronchial tree | Anatomy | |
| • Correlate the different developmental stages of Lung with its congenital anomalies | | |
| • Describe the different volumes and capacities of lungs | Physiology |  |
| • Correlate clinical presentation and investigations with different pulmonary diseases | Pulmonology | |
| • Discuss the epidemiology, patho-physiology and etiology of COPD<br>• Explain the clinical presentation of COPD<br>• Discuss the investigations required for the diagnosis of COPD<br>• Describe the management plan of COPD | Pulmonology | |
| • Discuss the differential diagnosis of granulomatous inflammation including TB | Pathology |  |
| • Identify histopathological features of a patient suffering from chronic obstructive pulmonary disease | | |
| • Explain the etiology and pathogenesis of the following:<br>1. Chronic bronchitis<br>2. Bronchiectasis<br>3. Asthma<br>4. Emphysema | |  |

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| • Discuss pathogenesis of Anaphylaxsis | | |
| **HYPERSENSITIVITY RELATED DISEASES *(Asthma)*** | | |
| • Explain the role of histamine and antihistamines in bronchial asthma<br>• Describe the mechanism of action, pharmacological properties, clinical uses and adverse effects of antihistamines<br>• Discuss the drugs used in prophylaxis of asthma<br>• Describe drugs used in acute attack of asthma<br>• Discuss the treatment of status asthmatics<br>• Explain the adverse effect of different drugs used in asthma<br>• Justify different treatment plans for asthma on the basis of severity of disease (mild, moderate, severe)<br>• Demonstrate the methods of administration of drugs used in asthma including nebulizer and inhaler<br>• Discuss drugs used in COPD | Pharmacology |  |
| • Discuss the epidemiology, pathophysiology, etiology, and contributing factors related to the development of asthma<br>• Describe the clinical presentation, diagnosis and investigations of asthma<br>• Classify asthma on the basis of clinical presentation into mild, moderate, life threatening and near fatal asthma<br>• Review the pharmacologic treatments for different types of asthma<br>• Describe long-term asthma management plan including pharmacological, physical and occupational therapy | Pulmonology |  <br>  |
| • Discuss the etiology, pathogenesis, clinical presentation and management of asthma in children | Pediatrics | |
| • Describe the prevalence, causes and primary prevention of asthma | Community Medicine | |
| **PULMONARY INFECTIONS (ARIs & Pulmonary Tuberculosis)** | | |
| • Identify the common pathogens, modes of transmission and risk factors for the common acute respiratory tract infections in pediatric age group<br>• Describe the clinical presentations and complications of ARIs including the danger signs of severe pneumonia<br>• Explain the management of acute respiratory tract infections in children<br>• Explain the most effective ways to prevent and control ARIs | Pediatrics |  |

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| • Explain the community acquired pneumonia with special emphasis on its general features and causative agents | Pulmonology | |
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| • Discuss the pathogenesis of pneumonia | Pathology | |
| • Describe IMNCI (integrated management of neonatal and childhood illnesses) related classification for pneumonia | Community Medicine | |
| • Discuss the clinical diagnosis, investigation and management protocol for TB and MDR TB | Pulmonology | |
| • Explain tuberculosis as a public health problem globally including Pakistan<br>• Discuss the various modes of transmission such of TB<br>• Describe the various screening tests of tuberculosis<br>• Discuss the preventive strategies at primary level and at the National Tuberculosis Control Program of Pakistan | Community Medicine |  |
| **RESPIRATORY FAILURE** | | |
| • Distinguish between inflammatory and non-inflammatory pleural effusions | Pathology |  |
| • Classify the different types of respiratory failure along with the essentials of diagnosis<br>• Discuss the investigations and management respiratory failure diseases | Pulmonology | |
| • Discuss the etiology and classification of pneumothorax<br>• Discuss the diagnosis and management of pneumothorax | | |
| • Classify Pleural effusion<br>• Discuss the approach in the diagnosis and management of pleural effusion | | |
| • Correlate the normal acid base balance of the body with levels of pH, PCO2, PO2 and HCO3<br>• Interpret the ABG report on the basis of pH, PCO2 and HCO3 levels<br>• Diagnose the different acid base disorders along with the compensatory responses | Chemical Pathology |  |
| • Explain Pulmonary hypertension and diseases of vascular | Pathology | |

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| origin | | |
| • Discuss pathogenesis of pulmonary embolism and infarction | | |
| • Correlate the etiological factors with development of ARDS<br>• Discuss the diagnostic features of ARDS<br>• Explain various treatment strategies for ARDS<br>• Discuss pharmacological and non-pharmacological therapies for the management of patients with or at risk ARDS | Pulmonology | |
| • Describe the basic concepts of arterial blood gases (ABGs) | Physiology |  |
| • Perform ABGs sampling | Skills Lab | |
| • Explain the normal constituents of pleural fluid, mainly pH, protein, glucose and lactate dehydrogenase (LDH)<br>• Differentiate between exudative and transudative pleural fluid<br>• List the causes of exudative and transudative pleural effusions | Chemical Pathology |  |
| **RESTRICTIVE LUNG DISEASES & TUMORS** | | |
| • Discuss, classification, etiology and pathogenesis of restrictive lung diseases | Pathology |  |
| • Differentiate between obstructive and restrictive lung disease on the basis of pathogenesis, clinical presentation and pulmonary function tests | |  |
| • Describe the general and specific preventive measures against various pneumoconiotic diseases such assilicosis, bysinosis, asbestosis, anthracosis etc<br>• Explain the prevention and control of chicken pox<br>• Explain the prevention and control of Influenza<br>• Explain risks, control measures, common pathogens among travelers<br>• Define the role of International health regulations for travelers | Community Medicine |  |
| • Describe the clinical features, investigations and management plans for restrictive lung diseases | Pulmonology | |
| • Discuss the imaging techniques in respiratory disease | Radiology | |
| • Classify lung tumors<br>• Describe characteristics of lung tumors | Pathology | |
| • Explain the microscopic features of lung tumors | |  |

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| • Describe classification of bronchogenic carcinomas<br>• List risk factors of lung cancer<br>• Discuss clinical features and investigations for bronchogenic carcinoma<br>• Explain staging of bronchogenic carcinoma<br>• Describe management plan and complications of bronchogenic carcinoma | Pulmonology |  |
| ***FORENSIC MEDICINE*** | | |
| **Post Mortem Examination**<br>• Describe the objectives, rules, essentials, and precautions for post mortem or autopsy examination<br>• Discuss the different types of autopsy | Forensic Medicine |  |
| **Medico legal Autopsy**<br>• Describe procedure of medico legal autopsy<br>• Describe importance of examination of dead body at scene | |  |
| **Exhuming The Dead**<br>• Describe Exhumation of human remains for medico-legal purposes | | |
| **Negative and Obscure autopsy**<br>• Explain Negative and Obscure autopsy | | |
| **Postmortem Artifacts.**<br>• Discuss the different types of postmortem artifacts | |  |
| **Post mortem Autopsy report**<br>• Describe a post mortem autopsy report | | |
| **Asphyxial deaths**<br>• Classify asphyxial deaths<br>• Explain etiology & patho-physiology of asphyxia | | |
| • Discuss Cause of Death (COD) in asphyxia<br>• Differentiate between Suicide and Murder, and Accidental deaths<br>• Differentiate between Ante mortem and Postmortem appearances | |  |
| **Mechanical asphyxia I**<br>• Describe classical signs, cause of death, fatal period, and postmortem appearances of the followings:<br>○ Hanging | |  |

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|---|---|---|
| ○ Strangulation | | |
| ○ Throttling<br>○ Smothering<br>○ Traumatic asphyxia | | |
| **Mechanical asphyxia II**<br><br>• Describe classical signs, cause of death, fatal period, and postmortem appearances of the followings:<br>○ The sexual asphyxia<br>○ Suffocation / Environmental asphyxia<br>○ Gagging/Choking<br>○ Café coronary | |  |
| **Drowning**<br><br>• Explain Drowning & *Immersion*<br>• Describe post mortem examination of bodies recovered from water | | |
| • Discuss Pesticide poisons/Metallic poisons-Lead, Mercury Poisoning | |  |

**LEARNING RESOURCES**

| *SUBJECT* | *RESOURCES* |
|---|---|
| *ANATOMY* | **TEXT BOOKS**<br>1. Clinical Anatomy by Richard Snell |
| *PHYSIOLOGY* | **TEXT BOOKS**<br>1. Textbook Of Medical Physiology by Guyton And Hall |
| **COMMUNITY MEDICINE** | **TEXT BOOKS**<br>1. Community Medicine by Parikh<br>2. Community Medicine by M Illyas<br>3. Basic *Statistics* for the Health Sciences by Jan W Kuzma |
| **FORENSIC MEDICINE** | **TEXT BOOKS**<br>1. Nasib R. Awan. Principles and practice of Forensic Medicine 1st ed. 2002.<br>2. Parikh, C.K. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology. 7th ed.2005.<br>**REFERENCE BOOKS**<br>3. Knight B. Simpson's Forensic Medicine. 11th ed.1993.<br>4. Knight and Pekka. Principles of forensic medicine. 3rd ed.2004<br>5. Krishan VIJ. Text book of forensic medicine and toxicology (principles and practice). 4th ed. 2007<br>6. Dikshit P.C. Text book of forensic medicine and toxicology. 1st ed. 2010<br>7. Polson. Polson's Essential of Forensic Medicine. 4th edition. 2010.<br>8. Rao. Atlas of Forensic Medicine (latest edition).<br>9. Rao. Practical Forensic Medicine 3rd ed ,2007.<br>10. Knight: Jimpson's Forensic Medicine 10th 1991, 11th ed.1993<br>11. Taylor's Principles and Practice of Medical Jurisprudence. 15th ed.1999<br>**CDs:**<br>1. Lectures on Forensic Medicine.<br>2. Atlas of Forensic Medicine.<br>**WEBSITES:**<br>www.forensicmedicine.co.uk |

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|---|---|
| **GENERAL MEDICINE** | **REFERENCE BOOKS:**<br>1. Hutchison's Clinical Methods, 23rd Edition<br>2. MacLeod's clinical examination 13th edition<br>3. Davidson's Principles and Practice of Medicine<br>4. Kumar and Clark's Clinical Medicine<br>5. HCAI guidelines CDC<br>6. WHO TBguidelines<br>**WEBSITES:**<br>7. http://lej4learning.com.pk/category/applied-sciences/medicine/<br>8. http://www.nejm.org/page/about-nejm/multimedia-and-images |
| **PATHOLOGY/MICROBIOLOGY** | **TEXT BOOKS**<br>1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition.<br>2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD<br>**WEBSITES:**<br>1. http://library.med.utah.edu/WebPath/webpath.html<br>2. http://www.pathologyatlas.ro/ |
| **PEDIATRICS** | **TEXT BOOK:**<br>1. Basis of Pediatrics (8th Edition Pervez Akbar)<br>2. Textbook of Pediatrics (5th Edition) by PPA |
| **PHARMACOLOGY** | **A. TEXT BOOKS**<br>1. Lippincot Illustrated Pharmacology<br>2. Basic and Clinical Pharmacology by Katzung |

## ADDITIONAL LEARNING RESOURCES

| | |
|---|---|
| **Hands-on Activities/ Practical** | Students will be involved in Practical sessions and hands-on activities that link with the respiratory II module to enhance the learning. |
| **Labs** | Utilize the lab to relate the knowledge to the specimens and models available. |
| **Skills Lab** | Provides the simulators to learn the basic skills and procedures. This helps build the confidence to approach the patients. |
| **Videos** | Familiarize the student with the procedures and protocols to assist patients. |
| **Computer Lab/CDs/DVDs/Internet Resources:** | To increase the knowledge students should utilize the available internet resources and CDs/DVDs. This will be an additional advantage to increase learning. |
| **Self-directed learning** | Self-directed learning is scheduled to search for information to solve cases, read through different resources and discuss among the peers and with the faculty to clarify the concepts. |

## ASSESSMENTMETHODS:

- **Best Choice Questions (BCQs)** also known as MCQs (Multiple Choice Questions)
- **Objective Structured Practical/Clinical Examination OSPE or OSCE**

**BCQs:**

- A BCQ has a statement or clinical scenario of four options (likely answers).
- **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 LNHMC.

**OSCE:**

- All students rotate through the same series of stations in the same allocated time.
- At each station, a brief written statement includes the task. Student completes the given task at one given station in a specified time.
- Stations are observed, unobserved, interactive or rest stations.
- In unobserved stations, flowcharts, models, slide identification, lab reports, case scenarios may be used to cover knowledge component of the content.
- Observed station: Performance of skills /procedures is observed by assessor
- Interactive: Examiner/s ask questions related to the task within the time allocated.
- In Rest station, students in the given time not given any specific task but wait to move to the following station.

**Internal Evaluation**

- Students will be assessed comprehensively through multiple methods.
- 20%marksofinternalevaluationwillbeaddedintheoryofsemesterexam.That20%may include class tests, assignment, journals, and the modular exam which will all have specific marks allocation.

| **Example: Number of Marks allocated for Semester Theory and Internal Evaluation** | | | |
|---|---|---|---|
| **JSMU Examination** | **Theory Marks** | **Internal Evaluation (Class tests +Journals + Assignments + Modular Exam)** | **Total(Theory)** |
| | **80%** | **20%** | 100% |

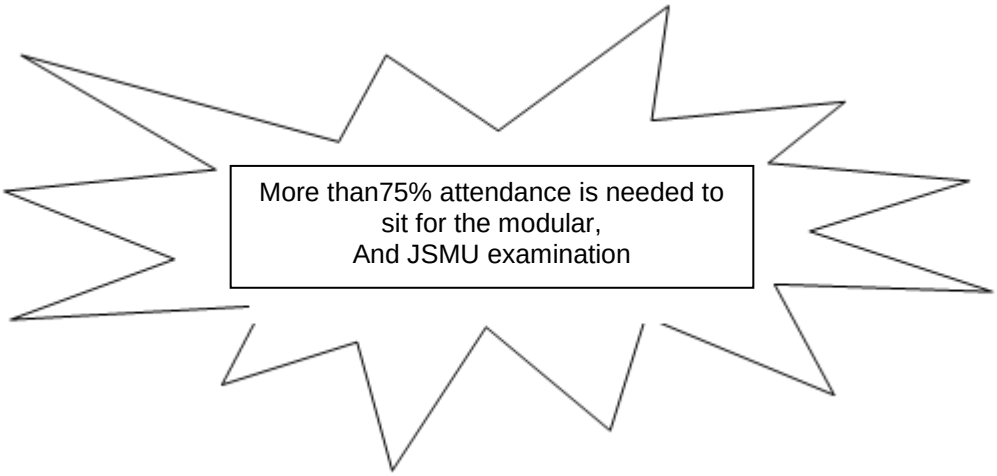
**Formative Assessment**

Individualdepartmentmayholdquizorshortanswerquestionstohelpstudentsassesstheir own learning. The marks obtained are not included in the internal evaluation

**For JSMU Examination Policy, please consult JSMU website!**

**MODULAR EXAMINATION RULES & REGULATIONS (LNH&MC)**

- Student must report to examination hall/venue, 30minutes before the exam.
- **Exam will begin sharp at the given time.**
- No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the seats.
- **Cell phones are strictly not allowed in examination hall.**
- If any student is found with cell phone in any mode (silent, switched off or on) he/she will not be allowed to continue their exam.
- No students will be allowed to sit in exam without University Admit Card, LNMC College ID Card and Lab Coat
- Student must bring the following stationary items for the exam: Pen, Pencil, Eraser, and sharpener.
- In discipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.



**SCHEDULE:**

| WEEKS | 3rd Year SEMESTER 5 | MONTH |
|---|---|---|
| WEEK 1 | INFECTIOUS DISEASES MODULE | 3rd Dec, 2018 |
| WEEK 2 | | |
| WEEK 3 | | |
| WEEK 4 | | |
| WEEK 5 | | 2nd Jan , 2019 |
| | MODULAR EXAM | 3rd & 5th Jan, 2019 |
| WEEK 1 | HEMATOLOGY MODULE | 7th Jan, 2019 |
| WEEK 2 | | |
| WEEK 3 | | |
| WEEK 4 | | 29th Jan, 2019 |
| | MODULAR EXAM | 1st & 2nd Jan, 2019 |
| WEEK 1 | RESPIRATORY II MODULE | 4th Feb, 2019 |
| WEEK 2 | | |
| WEEK 3 | | |
| WEEK 4 | | 28th Feb, 2019 |
| | MODULAR EXAM | 1st & 2nd Mar, 2019 |
| WEEK 1 | CVS II MODULE | 4th Mar, 2019* |
| WEEK 2 | | |
| WEEK 3 | | |
| WEEK 4 | | 30th March, 2019* |
| | MODULAR EXAM | April, 2019* |

*Final dates will be announced later

References (title page)

1. http://www.aboutcancer.com/lung_xrays_abnormal.htm
2. http://www.mhhe.com/biosci/esp/2001_gbio/folder_structure/an/m7/s4/index.htm