Al-Nahrain University

College of Medicine

Respiratory Medicine – Course

Grade: Fourth

Semester: First

Hours per Week: Theory 2

Total Hours: 25

Credits 2

1. **Learning objectives**

The course is designed to enable the student to:

1. 1. Demonstrate knowledge in the basic sciences pertinent to the respiratory system
2. Explain the signs and symptoms of common respiratory presentations in terms of their underlying scientific principles
3. Explain the scientific principles of common respiratory investigative techniques, and critique their appropriateness and results
4. Explain the scientific principles of common approaches to management of patients with respiratory diseases.
5. **Instructional and Learning methods and tools**

This course is given as twice weekly lecture for 1 hour each. The lectures are interactive and composed of case-based learning with pre- and post questions and various student tasks to implement self-directed learning.

1. **Syllabus**

|  |  |  |
| --- | --- | --- |
| Hours | Topics | Objectives  |
| 1 | Introduction To Respiratory Medicine: Scientific background and clinical methods | Demonstrate knowledge of the basic anatomy of the respiratory system Apply the knowledge of the physiological basis of ventilation and gas exchange in the assessment of patient complainList the lung defense mechanismsPredict the consequences of failing defense mechanisms of lung defencesAnalyze the patient complain(s) Construct a differential diagnosis based on that complainRecognize the causes of different physical signsPlan the evaluation process according to clinical data |
| 2 | Investigations in Respiratory Medicine: Structure and function assessment | Choose the most appropriate investigation according to the clinical encounterAnalyze the results of spirometry Construct a differential diagnosis based on parameters of lung function testsDifferentiate the types of respiratory diseases based on the results of arterial blood gas analysisRecognize the different radiological termsInterpret the radiological signsAppraise the benefits of bronchoscopy (flexible and rigid) |
| 1 | **Diseases of the upper airways:** **Allergic rhinitis** **Sleep – related disorders** | Recognize the different types of rhinitis Differentiate the treatment options for each typeClassify sleep – related breathing disorders Distinguish obstructive sleep apnea from simple snoringInterpret the results of sleep study |
| 2 | **Infections of the respiratory system:**CAPVAPAspiration Pneumonia | Differentiate the different types of upper respiratory tract infectionsAssess the need for antibiotic therapy in patients with URTiDefine bronchitis Define pneumonia Differentiate between pneumonia and bronchitisList the different causes of pneumonia Describe the clinical features of pneumonia Demonstrate knowledge in the differences between clinical features with regard to microbiologic etiologyFormulate plan for management of pneumonia Assess severity of pneumonia Appraise pneumonia complicationsChoose the appropriate management planEvaluate readiness for dischargeDefine hospital acquired pneumoniaRecognize the clinical features of hospital acquired pneumonia Choose the appropriate treatment of hospital acquired pneumonia Distinguish the clinical features of ventilator associated pneumoniaChoose the appropriate investigations for ventilator associated pneumoniaElect the best treatment strategy for ventilator associated pneumonia Recognize the clinical features of aspiration pneumonia Elect the best treatment for aspiration pneumonia |
| 1 | **Infections of the respiratory system:**Fungal  | List clinically relevant fungal infections of the lungClassify the types of aspergillosis Demonstrate knowledge in the management of aspergillosis subtypes |
| 1 | **Infections of the respiratory system:**Parasitic and lung abscess | Define hydatid cystRecognize clinical features of hydatid cystDifferentiate hydatid cyst from other cystic lung diseases Describe the diagnostic tests for hydatid cystManage hydatid cyst patient Demonstrate knowledge in the indications for surgical removal |
| 2 | **Tuberculous lung infections** | Define tuberculosisRecognize the epidemiology of tuberculosisAnalyze the resurgence of tuberculosisList the sites of tuberculous infectionsCompare the different presentations of tuberculosisFormulate differential diagnosis based on clinical presentationsConstruct a diagnostic plan for tuberculosis List the diagnostic tests for tuberculosisAnalyze the results of diagnostic testsFormulate management plan for patients with tuberculosisRecall the side effects of antituberculous drugsArrange follow-up plan after treatment Recognize complications of tuberculosis |
| 2  | Obstructive Lung Diseases: Asthma | Recall the immunological basis of asthma Illustrate the effect of extrinsic and intrinsic factors in the pathogenesis of asthmaAppraise the epidemiology of asthma  Compare the differentDemonstrate ability to recognize clinical features of asthmaArrange acceptable diagnostic tests Organize management plan for patient with chronic asthmaEvaluate patient response to asthma medicationsCommunicate treatment options to patients and address their concernsDiscriminate patient with acute severe asthma and life threatening asthma List treatment steps in the management of acute severe asthma  |
| 2 | Obstructive Lung Diseases: COPD and Bronchiectasis | Define COPDRecall the causes of COPDIllustrate the relation between environmental factors and the development of COPDCompare the different phenotypes of COPDDemonstrate ability to recognize the clinical features of COPDArrange acceptable diagnostic testOrganize management plan for patient with COPDEvaluate patient response to COPD medicationsCommunicate treatment options to patients and address their concernsDiscriminate patient with acute exacerbation of COPD List treatment steps in the management of acute exacerbation of COPD List the causes of bronchiectasis Classify bronchiectasis according to etiology Formulate differential diagnosis based on patient history and examination findingsChoose diagnostic studies to confirm the diagnosis Construct management plan for non-cystic fibrosis bronchiectasis Manage patient with cystic fibrosis |
| 1 | **Pleural Effusion** | List the causes of pleural effusion Demonstrate knowledge of the mechanisms of fluid accumulation Recognize the clinical features of pleural effusion and its underlying causeArrange diagnostic plan to confirm and identify the cause of pleural effusion Analyze the results of pleural fluid aspirate and formulate a differential diagnosis accordingly Organize treatment strategy for pleural effusion  |
| 1 | **Pneumothorax** | Define pneumothoraxDemonstrate knowledge of mechanism of pneumothoraxRecognize the clinical features pf pneumothorax Differentiate life-threatening tension pneumothorax from simple pneumothoraxAssess the need for treatment of tension pneumothoraxArrange diagnostic tests to confirm the diagnosisManage patient with pneumothorax by chest tubeDemonstrate knowledge in the indications of chest tube insertionAnalyze the function of the chest tube |
| 1 | **Tumors of the Lung** | Classify the primary lung tumorsRecognize the etiologic causes of lung tumorsApply knowledge in recognizing the clinical features of lung tumorsFormulate plan of investigation for the diagnosis of lung tumorsList the sites of primary tumors with frequent lung metastasisArrange a plan for the care of patient with non operable lung tumorAppraise patient concerns dealing with lung tumor diagnosisArrange plan of investigations to determine the appropriate treatment option.  |
| 1 | Surgical treatment of lung cancer and Lung Transplant  | List the contraindications for surgical treatment of lung tumorsRecognize the surgical options for treatment of lung tumorsPredict the postoperative complications after thoracotomy Demonstrate knowledge in the management of postoperative thoracotomy patient Recognize early and late complications of thoracotomy and illustrate the immediate management plan for them. List the non-surgical treatment options Recognize the conditions that require lung transplant as part of management List the types of lung transplantationRecall the complications of lung transplantation |
| 1 | Chest Wall Diseases | Recognize diseases of the chest wall Evaluate patient with diseases of the chest wall List the surgical options for treatment of chest wall deformities |
| 1 | Diaphragm And Mediastinal Diseases | Recognize diseases of the diaphragm Evaluate patient with diseases of the diaphragm List the surgical options for treatment of diaphragmatic hernia |
| 2 | Critical Care in respiratory Medicine | Define respiratory failureRecall the types of respiratory failure Compare the different types of respiratory failureList the causes of respiratory Describe the clinical features of respiratory failureArrange diagnostic plan to evaluate patient with respiratory failure Evaluate treatment options for the different types of respiratory failure Assess patient response to initial treatment Address patient concernsDefine ARDSRecognize the pathogenesis of ARDSList the causes of ARDSCompare ARDS to cardiac pulmonary edemaEvaluate the clinical features that occur with ARDSFormulate a diagnostic plan for ARDSPredict the outcome of ARDS Organize treatment plan for ARDSList the low flow oxygen delivery devicesDifferentiate the clinical conditions that need low flow delivery devicesList the high flow oxygen delivery devicesAnalyze the conditions that require high flow devices |
| 2 | Interstitial Lung Diseases | Define diffuse parenchymal lung diseasesRecall the pathogenesis of DPLDList the causes of DPLDClassify DPLDDifferentiate ILD from other causes of dyspnea Formulate diagnostic plan for suspected ILDRecall the clinical features of various ILD |
| 1 | Lung Diseases in Immunosupppressed Individuals  | Recognize the importance of immune suppression on lung diseases. List the infectious diseases associated with HIVDifferentiate between the different etiologiesFormulate diagnostic planRecall the diagnostic tests for pneumocystis jirovecci Manage patients with pneumocystis jirovecii Recognize the differences in presentation of tuberculosis patient between immunocompetent and immunosuppressed individuals Define Kaposi sarcomaRecognize the clinical features of Kaposi sarcoma |

1. **Student assessment:**

The minimum requirement of a student to pass is to achieve at least 50% of the total 100 marks assigned for the course.

The marks are distributed as follows:

Daily quizzes and HomeWorks (10%)

Midterm Exam (20%) as single best answer questions

Final Exam (70%) as – Single Best Answer 70 items

* Modified – Essay Questions (4 cases)

Students who fail to attain the 50% cut-off mark are required to re-sit for a second trial examination similar to the final one. Failing in the second trial entails the student to repeat the academic year.

1. **Books and references:**
2. Davidson’s Principles and Practice of Medicine
3. Bailey and Love’s textbook of surgery
4. Harrison’s Principles of Internal Medicine