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**

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| 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 complain  List the lung defense mechanisms  Predict the consequences of failing defense mechanisms of lung defences  Analyze the patient complain(s)  Construct a differential diagnosis based on that complain  Recognize the causes of different physical signs  Plan 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 encounter  Analyze the results of spirometry  Construct a differential diagnosis based on parameters of lung function tests  Differentiate the types of respiratory diseases based on the results of arterial blood gas analysis  Recognize the different radiological terms  Interpret the radiological signs  Appraise 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 type  Classify sleep – related breathing disorders  Distinguish obstructive sleep apnea from simple snoring  Interpret the results of sleep study |
| 2 | **Infections of the respiratory system:**  CAP  VAP  Aspiration Pneumonia | Differentiate the different types of upper respiratory tract infections  Assess the need for antibiotic therapy in patients with URTi  Define bronchitis  Define pneumonia  Differentiate between pneumonia and bronchitis  List the different causes of pneumonia  Describe the clinical features of pneumonia  Demonstrate knowledge in the differences between clinical features with regard to microbiologic etiology  Formulate plan for management of pneumonia  Assess severity of pneumonia  Appraise pneumonia complications  Choose the appropriate management plan  Evaluate readiness for discharge  Define hospital acquired pneumonia  Recognize the clinical features of hospital acquired pneumonia  Choose the appropriate treatment of hospital acquired pneumonia  Distinguish the clinical features of ventilator associated pneumonia  Choose the appropriate investigations for ventilator associated pneumonia  Elect 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 lung  Classify the types of aspergillosis  Demonstrate knowledge in the management of aspergillosis subtypes |
| 1 | **Infections of the respiratory system:**  Parasitic and lung abscess | Define hydatid cyst  Recognize clinical features of hydatid cyst  Differentiate hydatid cyst from other cystic lung diseases  Describe the diagnostic tests for hydatid cyst  Manage hydatid cyst patient  Demonstrate knowledge in the indications  for surgical removal |
| 2 | **Tuberculous lung infections** | Define tuberculosis  Recognize the epidemiology of tuberculosis  Analyze the resurgence of tuberculosis  List the sites of tuberculous infections  Compare the different presentations of tuberculosis  Formulate differential diagnosis based on clinical presentations  Construct a diagnostic plan for tuberculosis  List the diagnostic tests for tuberculosis  Analyze the results of diagnostic tests  Formulate management plan for patients with tuberculosis  Recall the side effects of antituberculous drugs  Arrange 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 asthma  Appraise the epidemiology of asthma  Compare the different  Demonstrate ability to recognize clinical features of asthma  Arrange acceptable diagnostic tests  Organize management plan for patient with chronic asthma  Evaluate patient response to asthma medications  Communicate treatment options to patients and address their concerns  Discriminate 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 COPD  Recall the causes of COPD  Illustrate the relation between environmental factors and the development of COPD  Compare the different phenotypes of COPD  Demonstrate ability to recognize the clinical features of COPD  Arrange acceptable diagnostic test  Organize management plan for patient with COPD  Evaluate patient response to COPD medications  Communicate treatment options to patients and address their concerns  Discriminate 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 findings  Choose 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 cause  Arrange 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 pneumothorax  Demonstrate knowledge of mechanism of pneumothorax  Recognize the clinical features pf pneumothorax  Differentiate life-threatening tension pneumothorax from simple pneumothorax  Assess the need for treatment of tension pneumothorax  Arrange diagnostic tests to confirm the diagnosis  Manage patient with pneumothorax by chest tube  Demonstrate knowledge in the indications of chest tube insertion  Analyze the function of the chest tube |
| 1 | **Tumors of the Lung** | Classify the primary lung tumors  Recognize the etiologic causes of lung tumors  Apply knowledge in recognizing the clinical features of lung tumors  Formulate plan of investigation for the diagnosis of lung tumors  List the sites of primary tumors with frequent lung metastasis  Arrange a plan for the care of patient with non operable lung tumor  Appraise patient concerns dealing with lung tumor diagnosis  Arrange 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 tumors  Recognize the surgical options for treatment of lung tumors  Predict 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 transplantation  Recall 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 failure  Recall the types of respiratory failure  Compare the different types of respiratory failure  List the causes of respiratory  Describe the clinical features of respiratory failure  Arrange 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 concerns  Define ARDS  Recognize the pathogenesis of ARDS  List the causes of ARDS  Compare ARDS to cardiac pulmonary edema  Evaluate the clinical features that occur with ARDS  Formulate a diagnostic plan for ARDS  Predict the outcome of ARDS  Organize treatment plan for ARDS  List the low flow oxygen delivery devices  Differentiate the clinical conditions that need low flow delivery devices  List the high flow oxygen delivery devices  Analyze the conditions that require high flow devices |
| 2 | Interstitial Lung Diseases | Define diffuse parenchymal lung diseases  Recall the pathogenesis of DPLD  List the causes of DPLD  Classify DPLD  Differentiate ILD from other causes of dyspnea  Formulate diagnostic plan for suspected ILD  Recall 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 HIV  Differentiate between the different etiologies  Formulate diagnostic plan  Recall 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 sarcoma  Recognize 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