RSPT 307: INTERVENTIONAL PULMONOLOGY THEORY & APPLICATION

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	5
Hours:	5 lecture per week (60 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- The student will be able to demonstrate a comprehensive understanding of the principles and theories underlying interventional pulmonology procedures.
- The student will be able to describe the general principles of interventional pulmonology, disease specific applications, interventions and techniques.

Description

Provides the general principles of interventional pulmonology. Disease-specific application, including diagnostic and therapeutic interventions, techniques and procedures, will be introduced. Intended for students in the Respiratory Care Baccalaureate Degree Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:

1. Describe pulmonary diseases and disorders including their cause, clinical features, treatment, and management
2. Define interventional pulmonology
3. Describe the evolution of interventional pulmonology
4. Describe the current and future status of interventional pulmonology
5. Describe education and training in interventional pulmonology
6. Define medical terminology related to interventional pulmonology procedures
7. Describe patient monitoring during interventional pulmonology procedures
8. Describe general infection control and universal precautions
9. Describe radiation protection
10. Contrast moderate and deep sedation techniques
11. Understand the physiology of fixed airway obstruction
12. Explain airway imaging equipment
13. Describe simulation for endoscopy and bronchoscopy training

Course Content

1. Pulmonary diseases
    a. Restrictive vs. obstructive diseases
    b. Infectious diseases
    c. Interstitial lung diseases
    d. Chronic Obstructive Pulmonary Disease (COPD)
    e. Asthma
    f. Cystic Fibrosis and related diseases
    g. Pleural diseases
    h. Pulmonary vascular diseases
    i. Acute lung injury
    j. Pulmonary edema
    k. Multiple system organ failure
    l. Diseases of the chest wall, including neuromuscular diseases
    m. Neonatal and pediatric respiratory disorders
    n. Lung cancer
        i. Small cell lung CA
        ii. Non small cell lung CA
            1. Adenocarcinoma
            2. Squamous cell carcinoma
            3. Large cell carcinoma
        iii. Staging of lung cancer
            1. TNM Classification
            2. Stages for non-small cell CA
                a. Stage 0
                b. Stage I
                c. Stage II
                d. Stage IIIA
                e. Stage IIIB
                f. Stage IV
            3. Staging for small cell CA
                a. Limited
                b. Extensive
    o. Postoperative complications
        i. Prevention
        ii. Management
2. Interventional pulmonology
    a. Definition of interventional pulmonology
3. Evolution of interventional pulmonology
    a. Development of interventional pulmonology
    b. The development of the first endoscopes
    c. The invention of bronchoscopy
        i. The rigid bronchoscope
        ii. The flexible bronchoscope
    d. Technical developments
        i. Illumination
        ii. Documentation using media
        iii. Simulation models
4. Current and future status of interventional pulmonology
    a. Interventional pulmonology, 1980s, 1990s and 2000s
    b. Future projections in interventional pulmonology
5. Education and training in the field of interventional pulmonology
    a. Current medical fellowship programs for pulmonologists
6. Medical terminology

a. Medicine and specialties related to interventional pulmonology
b. Related diagnostic, therapeutic and surgical terms associated with interventional pulmonology
c. Related body systems associated with interventional pulmonology

7. Patient monitoring
   a. Vital signs
   b. Review of ECG monitoring
   c. Pulse oximetry review
   d. Capnometry review
   e. Hemodynamic monitoring
8. Infection control and universal precaution
   a. Medical asepsis
   b. Universal precautions
   c. Isolation procedures
9. Radiation protection during procedures
   a. Protection from radiation exposure
      i. Aprons
      ii. Shields
      iii. Dosimeters
      iv. Closing doors during procedures
      v. Safety precautions
10. Moderate and deep sedation techniques
    a. Analgesia
    b. Minimal sedation
    c. Moderate sedation
    d. Deep sedation
    e. General anesthesia
    f. Mallampati classifications
       i. Class I
       ii. Class II
       iii. Class III
       iv. Class IV
    g. Comorbidity assessments
       i. ASA physical status
    h. Equipment and monitors
    i. Post-procedure recovery
    j. Pharmacology
11. Physiology of fixed airway obstruction
    a. Spirometry
    b. Diagnosis
12. Airway imaging
    a. Autofluorescence imaging (AFI)
    b. Narrow band imaging (NBI)
    c. Confocal microscopy
13. Simulation for endoscopy and bronchoscopy training
    a. Simulation in bronchoscopy education
    b. Lo-fidelity simulation
    c. Hi-fidelity simulation
    d. Simulation for advanced procedures

Lab Content

Not applicable.

Special Facilities and/or Equipment

This course is taught fully online. Students need access to a computer with internet.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Weekly assignments
Weekly participation in discussion forums
Group projects

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Instructor-led weekly discussion forums
Lectures
Instructor-led group projects

Representative Text(s) and Other Materials

Ernst and Herth. Principles and Practice of Interventional Pulmonology. 2013.

Despite being older than five years, this is a seminal textbook in this area of study.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Weekly reading from the textbook
2. Cooperative learning exercises
3. Online content

Discipline(s)

Respiratory Technologies