

# RSPT 308: INTERVENTIONAL PULMONOLOGY PROCEDURES

## 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 identify and describe various advanced bronchoscopy and interventional pulmonology procedures.
- The student will be able to define general principles of diagnostic and therapeutic procedures.

## Description

Basic and advanced interventional pulmonology procedures. Procedures to be covered will include bronchoscopy, thoracoscopy, endoscopy, airway access procedures, and novel techniques. 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. Understand the general principles of endoscopic imaging
2. Explain bronchoscopy design for advanced procedures
3. Identify quality control procedures and general care of the bronchoscope
4. Describe diagnostic interventional pulmonology procedures
5. Describe therapeutic interventional pulmonology procedures
6. Explain thoracoscopy procedures
7. Describe airway access techniques
8. Describe other endoscopy and novel techniques

## Course Content

1. General principles of endoscopic imaging
  - a. Rigid bronchoscope
    - i. General design of the rigid bronchoscope
    - ii. Application and use
  - b. Flexible fiberoptic bronchoscopy
    - i. General design of the fiberoptic flexible bronchoscope
      1. Image system
      2. Mechanical system
      3. The channel or plumbing system

- a. Suction channel port
  - b. Instrument channel port
4. Electrical component
2. Bronchoscopy design for advanced procedures
    - a. Image guided bronchoscopy
    - b. Conventional biopsy techniques
  3. Quality control procedures and general care of the bronchoscope
    - a. Proper care of the bronchoscope
    - b. Pre-procedure care
    - c. Intra-procedure care
    - d. Post-procedure care
    - e. Reprocessing of bronchoscopes and autoclaving
    - f. Equipment damage and considerations
  4. Diagnostic procedures
    - a. Laryngoscopy
      - i. Indications for direct laryngoscopy
    - b. Diagnosis of vocal cord function and voice disorders
    - c. Biopsy techniques
    - d. Bronchoalveolar lavage
    - e. Endobronchial ultrasound
    - f. Esophageal ultrasound
    - g. EBUS-guided biopsies
    - h. Autofluorescence and imaging techniques
      - i. Optical coherence tomography
      - j. Image-guided bronchoscopy
        - i. Virtual bronchoscopic navigation
  5. Therapeutic procedures
    - a. Therapeutic bronchoscopy for airway obstruction
      - i. Foreign body removal
    - b. Airway stents
      - i. Metallic stents
      - ii. Tube stents
      - iii. Hybrid stents
    - c. Electrosurgery
    - d. Cryotherapy and cryodebridement
    - e. Microdebridors
    - f. Laser bronchoscopy
    - g. Brachytherapy
    - h. Photodynamic therapy
      - i. Balloon dilation techniques
    - j. Radiation therapy
      - i. Fiducial placement
    - k. Thermoplasty for severe asthma
      - i. Management of subglottic stenosis
    - m. Treatment and management of fistulas
    - n. Role of bronchoscopy in the management of hemoptysis
    - o. Lung volume reduction surgery
      - i. Bronchoscopic lung volume reduction
      - ii. Surgical lung volume reduction
    - p. Ablation treatment
    - q. Endoscopic lung abscess drainage
    - r. Airway reconstructive surgery
      - i. Management of post-transplant disorders
  6. Thoracoscopy procedures

## Discipline(s)

Respiratory Technologies

- a. Thoracentesis
  - b. Chest tube placement
  - c. Drain placement
  - d. Thoracoscopy and pleuroscopy procedures
  - e. Pleurodesis
  - f. VATS surgical procedures
  - g. Management of empyema and pleural effusions
7. Airway access techniques
- a. Percutaneous tracheostomy
  - b. Cricothyroidotomy
  - c. Transtracheal oxygen catheter placement
8. Novel procedures
- a. Natural orifice transluminal endoscopic surgery (NOTES)
  - b. Percutaneous endoscopic gastrostomy (PEG) tube placement
  - c. Whole lung lavage

## 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 board 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 field 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