

## Pulmonary Pathophysiology

Course Directors:  
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## Purpose of the Course

To provide you with an understanding of the mechanisms responsible for major pathophysiologic abnormalities which may be encountered in cardiorespiratory disease.

## Course Objectives

- To understand the important categories and causes of lung disease in humans
- To understand functional abnormalities in disease states
  - Mechanics
  - Gas exchange
  - Ventilation
  - Vascular changes

## Course Objectives - 2

- To learn the significance of the signs and symptoms of pulmonary disease
- To understand the role of diagnostic testing in pulmonary disease
- To understand treatment approaches to patients with lung diseases

## Course Outline

- 13 Lectures
- 6 Small Group Sessions
- 2 Pathology Lab Sessions
- 1 Pathology Review Session
- Textbook
  - John West "Pulmonary Physiology and Pathophysiology" 7<sup>th</sup> edition (2008)
  - **Required reading**
- Syllabus

## Course Outline - 2

- Review and overview of pulmonary pathophysiology
- Airway disease
- Parenchymal disease
- Neoplasms
- Infections
- Respiratory failure
- Pulmonary vascular disease

### New for 2009

- More review this week
- Team-Based Learning session
- Revised lectures
  - COPD
  - ILD (DPLD)
  - Pulmonary vascular disease

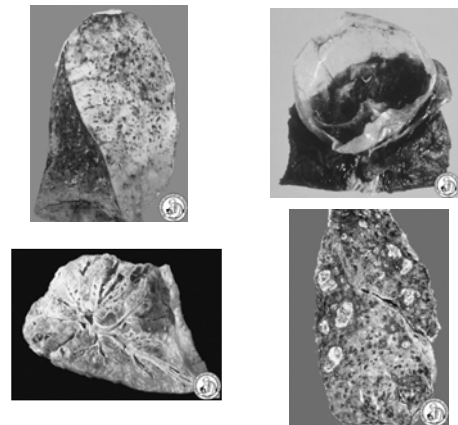
### Instructors' Responsibilities

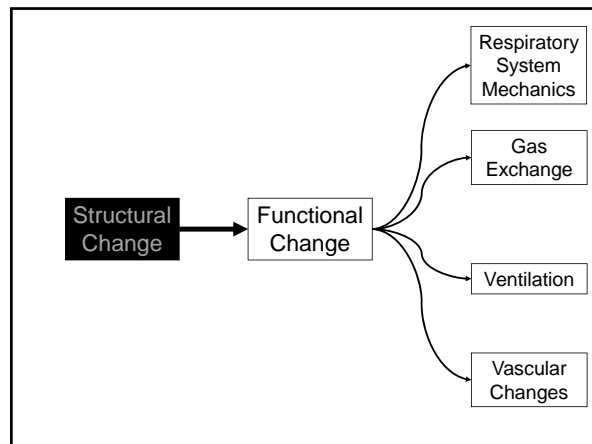
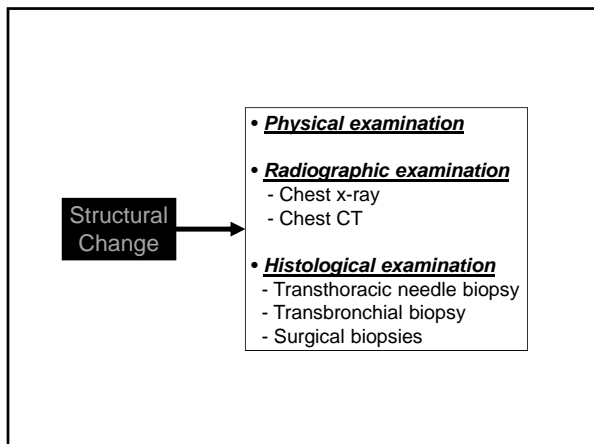
- Clear communication
  - Visual
  - Oral
  - Logical
- Complete and timely answers to questions
- Consistency of required material

### Students' Responsibilities

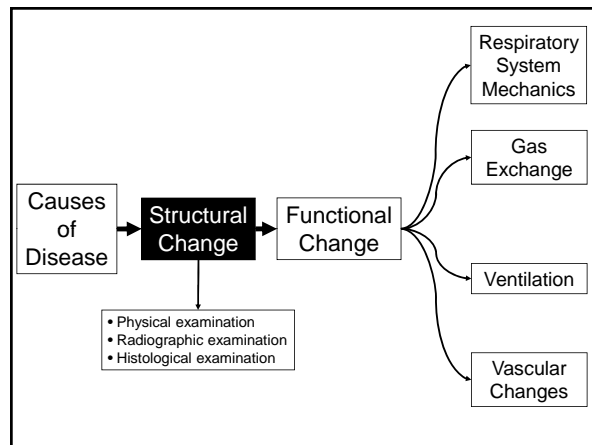
- Presence at all scheduled sessions
- Completion of required reading prior to each session
- Active participation in small groups and laboratory sessions

### Paradigm





	<u>Pathophysiology</u>	<u>Diagnosis</u>	<u>Treatment</u>
<b>Respiratory System Mechanics</b>	<ul style="list-style-type: none"> <li>• Airway resistance</li> <li>• Lung compliance</li> <li>• Chest wall compliance</li> </ul>	<ul style="list-style-type: none"> <li>• Physical exam</li> <li>• PFTs</li> <li>• Ventilator (!)</li> </ul>	<ul style="list-style-type: none"> <li>• Diuresis</li> <li>• Antibiotics</li> <li>• Corticosteroids</li> <li>• Bronchodilators</li> <li>• Radiotherapy</li> <li>• Transplantation</li> </ul>
<b>Gas Exchange</b>	<ul style="list-style-type: none"> <li>• V/Q mismatch</li> <li>• Right-to-left shunt</li> <li>• Diffusion</li> </ul>	<ul style="list-style-type: none"> <li>• Arterial blood gas</li> <li>• Pulse oximetry</li> <li>• Diffusion capacity</li> <li>• Shunt studies</li> </ul>	<ul style="list-style-type: none"> <li>• Oxygen</li> <li>• PEEP</li> </ul>
<b>Ventilation</b>	<ul style="list-style-type: none"> <li>• Control of breathing</li> <li>• Alveolar ventilation</li> <li>• Dead space ventilation</li> </ul>	<ul style="list-style-type: none"> <li>• Arterial blood gas</li> <li>• Polysomnography</li> </ul>	<ul style="list-style-type: none"> <li>• Ventilation                             <ul style="list-style-type: none"> <li>- Invasive</li> <li>- Non-invasive</li> </ul> </li> </ul>
<b>Vascular Changes</b>	<ul style="list-style-type: none"> <li>• Vascular obstruction</li> <li>• Vasculopathy</li> </ul>	<ul style="list-style-type: none"> <li>• V/Q scanning</li> <li>• Angiography</li> <li>• Right heart cath.</li> <li>• Echocardiography</li> </ul>	<ul style="list-style-type: none"> <li>• Anticoagulation</li> <li>• Vasodilators</li> </ul>



### Contact information

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