

# ESSENTIALS OF RADIOLOGY

1. **Title:** Radiology
2. **Objects:** Foreign student
3. **Total Content Hours:** 90
4. **Textbook:** Zhang Yun, Li Miaoling, Qiang Yongqian. RADIOLOGY, Dean's Office Xi'an Jiaotong University, 2004

## 5. Objectives:

To understand the methods of the examination.

To know well the normal X-ray features and the basic disorder X-ray signs.

To know X-ray features of the diseases.

To master principles of X-ray transmission computed tomography.

To understand density value and Hounsfield density scale in CT.

## 6. Contents

### Section One Bone and Joint System

- 1 Methods of Examination
- 2 Normal X-ray Features
- 3 Basic Disorder X-ray Signs of Bone
- 4 Basic Disorder X-ray Signs of Joint
- 5 Fracture of bone
- 6 Diagnosis of Fracture or Dislocation
- 7 Osteomyelitis
- 8 Skeletal Tuberculosis
- 9 Malignant tumors
- 10 Benign tumors and tumor-like conditions

### Section Two Respiratory System

- 1 Methods of Examination
- 2 Normal X-ray Features
- 3 Basic Disorder X-ray Signs of Lungs
- 4 Basic Disorder X-ray Signs of Pleura
- 5 Pneumonia
- 6 Bronchiectasis
- 7 Lung Abscess
- 8 Pulmonary Tuberculosis
- 9 Carcinoma of the Bronchus
- 10 Pulmonary Metastases

### Section Three Circulatory System

1. Methods of Examination
2. Normal X-ray Features of the Heart
3. Normal X-ray Features of Great Vessels
4. Basic Disorder X-ray Signs of the Heart
5. Basic Disorder X-ray Signs of Aorta
6. Basic Disorder X-ray Signs of Pulmonary Vessels
7. X-ray Signs of the Commoner Heart Disease

### Section Four The Abdomen

1. Methods of Examination
2. Normal X-ray Features
3. Basic X-ray Signs of Abnormal Plain Abdomen
4. Mechanical Obstruction of the Small Bowel
5. Obstruction of the Large Bowel
6. Paralytic Ileus
7. Closed Loop Obstructions
8. Intussusception

### **Section Five      The Gastral-Intestinal Tract**

1. The Methods of Examination
2. Normal X-ray Features of Pharynx and Esophagus
3. Normal X-ray Features of Stomach, Small and Large Intestine
4. Basic Disorder X-ray Signs of Pharynx and Esophagus
5. Basic Disorder X-ray Signs of Stomach, Small and Large Intestine
6. Esophageal Varices
7. Carcinoma of esophagus
8. Ulcer of Stomach
9. Neoplasms of Stomach
10. Duodenum Ulcer
11. Tuberculosis
12. Benign New Growth of Conlon
13. Adenocarcinoma of Colon

### **Section Six Teaching plan-----Computed Tomography**

1. The History of CT
2. The Development of CT Advantages of Spiral Compared with Conventional Computed Tomography
3. The Structure of CT
4. Scan Mode
5. Image Reconstruction
6. Density Value
7. Hounsfield Density Scale
8. Electron Densities of Various Body
9. Densitometry
10. Image Variation
11. Image Analysis-Window Settings
12. Image Analysis---Partial Volume
13. Image Analysis
14. Artifact
15. Pathomorphological Variation
16. CT Check Technique
17. Contrast Media
18. Enhancement CT Time Sequence of Targeted Bolus Injection
19. Interventional CT
20. Imaging Reconstruction

### **7. Practice Hours**

1. Normal X-ray Features of Bone and Joint      3
2. Basic Disorder X-ray Signs of Bone and Joint      3
3. Osteomyelitis Fracture of Bone      3
4. Skeletal Tuberculosis and Diagnosis of Fracture or Dislocation      3

5. Malignant , Benign and tumor-like tumors of Bone 3
6. Normal X-ray Features of Respiratory System 3
7. Basic Disorder X-ray Signs of Respiratory System 3
8. Pneumonia, Bronchiectasis and Lung Abscess 3
9. Pulmonary Tuberculosis 3
10. Carcinoma of the Bronchus and Pulmonary Metastases 3
11. Normal X-ray Features of Circulatory System 3
12. Basic Disorder X-ray Signs of Circulatory System 3
14. Normal X-ray Features of Gastral-Intestinal Tract 3
15. Basic Disorder X-ray Signs of Gastral-Intestinal Tract 3
16. Esophageal Varices and Ulcer of Gastral-Intestinal Tract 3
17. Tuberculosis of Intestinal Tract 3
18. Tumor of Gastral-Intestinal Tract 3
19. Teaching plan-----Computed Tomography 3

### 8.Total Hours

Section	Contents	Total Hours
1	<b>Bone and Joint System</b>	25
2	<b>Respiratory System</b>	25
3	<b>Circulatory System</b>	10
4	<b>Abdomen</b>	5
5	<b>Gastral-Intestinal Tract</b>	20
6	<b>Teaching plan-----Computed Tomography</b>	5