

Virginia Western Community College

RAD 240

Radiographic Pathology

Prerequisites:

None

Course Description:

Presents a survey of common medical and surgical disorders that affect radiographic images. Discusses conditions related to different systems of the human body. Studies the correlation of these conditions with radiographs.

Semester Credits: 3**Lecture Hours: 3****Lab/Clinical/Internship Hours: 0****Required Materials****Textbook:**

Radiographic Pathology for Technologists. Nina Kowalczyk. Latest Edition. Elsevier.
ISBN: 9780323089029

Supplementary Materials:

Several resource textbooks are located in the Radiography Lab

Course Outcomes

At the completion of this course, the student should be able to:

- Classify the more common diseases in each system in terms of their attenuation of x-rays
- Explain the changes in technical factors required for obtaining optimal quality radiographic images in patients with various underlying pathologic conditions
- Define and describe all bold-faced terms in the chapter
- Characterize the various alterations of cell growth
- Describe the various immune reactions of the body
- Describe various imaging modalities used in producing images of diseases
- Identify all equipment implanted and used as accessories in disease diagnosis and treatments especially depicted on medical images
- Identify physiology of each system and identify anatomic structures on diagrams and radiographic images.
- Ultimately, make logical inferences about patient conditions in relation to the imaging requests.

Topical Description

I: Introduction to Pathology

- Disease
- Hereditary Diseases
- Infections Disease Exposure
- Acquired Immunodeficiency Syndrome

II: Specialized Imaging Techniques

- Diagnostic Imaging Modalities

III: Skeletal System

- Physiology of the skeletal System
- Congenital/Hereditary Diseases of Bone
- Inflammatory and Infectious Disorders
- Metabolic bone Disease
- Fibrous Dysplasia
- Ischemic Necrosis of Bone
- Benign Bone tumors
- Malignant Bone Tumors
- Bone Metastases
- Fractures
- Fractures and Dislocations of the Spine
- Herniation of Intervertebral Disks
- Scoliosis
- Spondylolysis and spondylolisthesis

IV: Gastrointestinal System

- Physiology of the Digestive System
- Esophagus
- Stomach
- Small Bowel
- Colon
- Gallbladder
- Liver
- Pancreas
- Pneumoperitoneum
- Spleen

V: Urinary System

- Physiology of the Urinary System
- Congenital/Hereditary Diseases
- Inflammatory Disorders
- Urinary Calculi
- Urinary Tract Obstruction
- Cysts and Tumors
- Renal Vein Thrombosis
- Acute Renal Failure
- Chronic Renal Failure

VI: Respiratory System

- Physiology of the Respiratory System
- Internal Devices
- Congenital/Hereditary Diseases
- Inflammatory Disorders of the Upper Respiratory System
- Inflammatory Disorders of the Lower Respiratory System
- Diffuse Lung Disease
- Neoplasms
- Vascular Diseases
- Miscellaneous Lung Disorders
- Disorders of the Pleura
- Mediastinal Masses
- Disorders of the Diaphragm

VII: Cardiovascular System

- Physiology of the Cardiovascular System
- Congenital Heart Disease
- Acquired Vascular Disease
- Valvular Disease
- Pericardial Effusion
- Venous Disease

VIII: Nervous System

- Physiology of the Nervous System
- Infections of the Central Nervous System
- Tumors of the Central Nervous System
- Traumatic Processes of the Brain and Skull
- Vascular Disease of the Central Nervous System
- Multiple Sclerosis
- Epilepsy and Convulsive Disorders
- Degenerative Diseases
- Hydrocephalus
- Sinusitis

IX: Hematopoietic System

- Physiology of the Blood
- Diseases of Red Blood Cells
- Diseases of White Blood Cells
- Diseases of Platelets (Bleeding Disorders)

X: Endocrine System

- Physiology of the Endocrine System
- Adrenal Gland
- Pituitary Gland
- Thyroid Gland
- Parathyroid Glands
- Diabetes Mellitus

XI: Reproductive System

- Infectious Diseases of Both Genders
- Male Reproductive System
- Physiology of the Male Reproductive System
- Benign Prostatic Hyperplasia
- Carcinoma of the Prostate Gland
- Staging
- Undescended Testis (Cryptorchidism)
- Testicular torsion and Epididymitis
- Testicular Tumors
- Female Reproductive System
- Physiology of the Female Reproductive System
- Pelvic Inflammatory Disease
- Cysts and Tumors
- Breast Lesions
- Imaging in Pregnancy

XII: Miscellaneous Diseases

- Nutritional Diseases
- Systemic Lupus Erythematosus
- Melanoma
- Muscular Dystrophy
- Hereditary Diseases

Final Objective:

Prepare a 10 minute report and presentation on a disease process(es) utilizing knowledge gained from the chapters and images used in the course plus examples experienced in the clinical setting that relate to the specific condition or disease. The project should contain the following: signs, symptoms, diagnosis, testing and values, treatments, imaging protocols, prognosis, any correlation to patient histories that were presented on imaging requests, national and regional medical epidemiological data. Specific topics and more details will be given out in class.

Note to Instructors

1. Only Clinical Instructors may retrieve radiographic images from the Clinical Sites.