Virginia Western Community College
RAD 121
Radiographic Procedures I

Prerequisites
Admission into the Radiography Program

Course Description
Introduces procedures for positioning the patient's anatomical structures relative to the x-ray beam and image receptor. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton.

Semester Credits: 4 **Lecture Hours: 3** **Lab/Clinical/Internship Hours: 3**

Required Materials

Textbook:
Radiographic Positioning & Related Anatomy. 9th Ed. Kenneth L. Bontrager & John P. Lampignano. ISBN: 9780323399661

Radiographic Positioning & Related Anatomy: 9th Ed. Workbook. ISBN: 9780323481878

Supplementary Materials:
Several resource textbooks are located in the Radiography Lab
Laboratory facilities are available to radiography students during the day

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

- Understand human anatomy and the axial skeleton as it relates to radiographic positioning
- Perform radiographic positioning of the chest, abdomen, and axial skeleton
- Understand radiographic positioning concepts as they relate to the responsibilities of the clinical environment
- Understand radiographic positioning terminology and patient care practices

Topical Description

Unit I: Introduction to Radiographic Positioning- Chapter 1 Part 1

- Patient Care
- Patient Preparation
- Facilities Readiness

Unit II: Radiographic Positioning Terminology- Chapter 1 Part 2 & Chapter 3

- Human Anatomy Review
- Anatomical Landmarks
- Planes of the Body
- Regions of the Body
- Quadrants of the Body
- Body Habitus
- Beam Direction Terminology
- Radiation Protection Terminology

Unit III: Selected Positioning of the Chest- Chapter 2

- PA & Lat Erect Chest
- Decubitus Chest
- Supine Chest

Unit IV: Selected Positioning of the Abdomen- Chapter 3

- AP Abdomen (preliminary)
- Bladder
- Lateral Abdomen
- Decubitus Abdomen
- Upright Abdomen
- Posterior Obliques

Unit V: Radiographic Positioning of the Upper Extremity-Chapter 4

- Fingers and Thumb
- Hand
- Wrist
- Forearm
- Elbow

Unit VI: Radiographic Positioning of the Lower Extremity-Chapter 6

- Toes
- Feet
- Ankle
- Lower Leg
- Knee
- Patella
- Femur

Unit VII: Radiographic Positioning of the Shoulder Girdle- Chapter 5

- Humerus
- Shoulder
- Clavicle
- Scapula

Unit VIII: Radiographic positioning of the Hips and Pelvis-Chapter 7

- Femur
- Hips
- Pelvis
- SI Joints

Unit IX: Radiographic Positioning of the Lumbar Spine, Sacrum and Coccyx- Chapter 9

- Lumbar Spine
- Spots of Any Single Vertebra, i.e., L-5 - S-1 Junction
- AP, Lateral Sacrum and Coccyx

Specific Course Outcomes

At the completion of Unit I, the student should be able to:

- Select correct image receptor size
- Correctly set radiographic techniques
- Manipulate radiographic equipment
- Choose appropriate accessories, i.e., sponges, lead strips, markers

At the completion of Unit II, the student should be able to:

- List and identify the bony skeleton (omit skull)
- List and identify Anatomical Landmarks on a skeleton
- Correctly define and identify the Planes of Body from a diagram
- Correctly identify the Regions of the Body
- List the organs found in the Quadrants of the Body
- Correctly identify the Quadrants
- Write the correct definition for Sthenic, Hypersthenic, Hyposthenic and Asthenic Habitus'
- Anatomically locate the position of the lungs, stomach and gall bladder in all body habitus types
- Write the correct definitions for Beam Directional Terminology
- Physically demonstrate tube manipulation
- Write the correct definitions for X-ray Projection Terminology

At the completion of Unit III, the student should be able to:

- List the correct routine projections, image receptor sizes and centering references for the Chest (Basic, Special) and Upper Airway
- Obtain satisfactory radiographs and identify (critique) structures demonstrated on the Chest (Basic, Special) and Upper Airway

At the completion of Unit IV, the student should be able to:

- List the correct routine projections, image receptor size and centering references for the Abdomen

At the completion of Unit V, the student should be able to:

- List the correct routine projections, image receptor size and centering references for the Upper Extremities
- Obtain satisfactory radiographs and identify (critique) structures demonstrated on the Upper Extremities

At the completion of Unit VI, the student should be able to:

- List the correct routine projections, image receptor size and centering references for the Lower Extremities
- Obtain satisfactory radiographs and identify (critique) structures demonstrated on the Lower Extremities

At the completion of Unit VII, the student should be able to:

- List the correct routine projections, image receptor size and centering references for the Shoulder Girdle
- Obtain satisfactory radiographs and identify (critique) structures demonstrated on the Shoulder Girdle

At the completion of Unit VIII, the student should be able to:

- List the correct routine projections, image receptor size and centering references for the Hips-Pelvis and SI Joints
- Obtain satisfactory radiographs and identify (critique) structures demonstrated on the Hips-Pelvis and SI Joints

At the completion of Unit IX, the student should be able to:

- List the correct routine projections, image receptor sizes and centering references for the Lumbar Spine, Sacrum and Coccyx
- Obtain satisfactory radiographs and identify (critique) structures demonstrated on the Lumbar Spine, Sacrum and Coccyx

Note to Instructors

1. One-on-one tutorial sessions are available upon request.
2. Students may utilize the energized laboratory under supervision of a faculty member.
3. See Instructor's Notes within Course Syllabus