Basic Radiographic Procedures (RADR 1411)

**Credit:** 4 semester credit hours (3 hours lecture, 2 hours lab)

**Pre-requisite:** RADR 1309 Introduction to Radiography and Patient Care

**Course Description**
An introduction to radiographic positioning terminology, the proper manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy.

**Textbook and Materials**
- #882 Scan-trons and pencils

**Course Objectives**
1. By the end of the semester of instruction the student will be able to:
2. Define radiographic positioning terms
3. Manipulate equipment
4. Perform basic level procedures in positioning
5. Align anatomical structures and equipment
6. Evaluate images
7. Have a basic understanding of radiation therapy
8. Demonstrate a basic understanding of pediatric radiography

**Course Outline**
By the end of the semester the student will be able to:

1. **SKELETAL ANATOMY, POSITIONING NOMENCLATURE & BODY PLANES**
   A. Understand general, systemic, and skeletal anatomy and physiology
   B. Identify the name and number of bones associated with the human body
      1. axial skeleton
      2. appendicular skeleton
   C. Identify specified bones by classification
      1. long bones
      2. short bones
      3. flat bones
      4. irregular bones
      5. sesamoid bones
   D. Identify the layers of bone
   E. Identify and explain bone development
F. Identify and give examples of the classification of joints
   1. synarthrodial
   2. amphiarthrodial
   3. diarthrodial

G. Identify and demonstrate the common principles, rules of positioning, and
   various body positions

H. Define and demonstrate relationship terms

I. Define terms used to describe the human body
   1. body planes
   2. four body habitus types
   3. body cavities
   4. four quadrants
   5. nine regions

II. CHEST AND ABDOMEN ANATOMY AND POSITIONING
   A. Identify the anatomy landmarks of the chest and abdomen
   B. Identify the anatomical structure and function of the respiratory system
   C. Identify and explain the radiographic positions of the chest
      1. PA
      2. AP
      3. lateral
      4. Apical Lordotic
      5. Decubitus
   D. Identify and explain the radiographic positions of the abdomen
      1. AP
      2. Upright
      3. Decubitus
   E. Demonstrate the specific knowledge and skills associated with positioning of
      the chest and abdomen in a lab simulation
   F. Discuss modifications in positioning & technique for obese patients.

III. UPPER EXTREMITIES AND SHOULDER GIRDLE
   A. Identify the anatomical landmarks of the upper extremities and shoulder girdle
   B. Identify and explain the radiographic positions of the upper extremities and
      shoulder girdle
      1. hand
      2. wrist
      3. forearm
      4. humerus
      5. shoulder
      6. clavicle
      7. scapula
   C. Demonstrate the specific knowledge and skills associated with positioning of
      the upper extremities and shoulder girdle in a lab simulation

IV. LOWER EXTREMITIES AND PELVIC GIRDLE
   A. Identify the anatomical landmarks of the lower extremities and pelvis
   B. Identify and explain the radiographic positions of the lower extremities and
      pelvis
RA 1411
Course Syllabi - 2018

1. foot
2. calcaneus
3. ankle
4. lower leg
5. knee
6. femur
7. hip
8. pelvis
9. SI Joints

C. Demonstrate the specific knowledge and skills associated with positioning of the lower extremities and pelvis in a lab simulation
D. Discuss DEXA bone density studies, lone bone survey, and bone age studies.

V. BONY THORAX
A. Identify the anatomical landmarks of the bony thorax
B. Identify and explain the radiographic positions of the bony thorax
   1. ribs
   2. sternum
C. Demonstrate the specific knowledge and skills associated with positioning of the bony thorax in a lab simulation

VI. VERTEBRAL COLUMN
A. Identify the anatomical landmarks of the vertebral column
B. Identify and explain the radiographic positions of the vertebral column
   1. cervical
   2. thoracic
   3. lumbar
   4. sacrum
   5. coccyx
C. Demonstrate the specific knowledge and skills associated with positioning of the vertebral column in a lab simulation
D. Discuss lumbar puncture and myelography exams

VII. PEDIATRICS
A. Discuss the differences between adult and pediatric imaging
B. Discuss the importance of identifying and reporting child abuse

VIII. RADIATION THERAPY
A. Discuss the history of radiation therapy
B. Identify different types of cancer treatment
   a. Curative
   b. Palliative
C. Discuss the types of radiation therapy
   a. External beam therapy
   b. Brachytherapy
   c. Chemotherapy

IX. TRAUMA
A. List the types of trauma centers
B. Describe special equipment used for trauma patients
C. Discuss manipulation of equipment and positions for trauma patients
IX. FILM CRITIQUE
   A. Utilize critical thinking skills to critique radiograph for proper technique, patient positioning, and image appearance
   B. Utilize reasoning and problem solving skills to determine what must be done to the patient, tube, or film to correct certain errors demonstrated on radiographs

Grading Scale
Numeric to letter grade conversion:
   A = 93 - 100
   B = 84 - 92
   C = 77 - 83
   D = 60 - 76
   F = 0 - 59

* A minimum of 77% is required for successful completion of this course!

Course Evaluation
   Written Exams (4) 15% each =    60%
   Homework & Quizzes
   Laboratory Performance 15%
   Comprehensive Final 15%

Students not completing all required laboratory assignments and practical evaluations with 80% will receive an incomplete in the course.

Course Policies:
   1. No food, drinks, or use of tobacco products in class.
   2. Phones, headphones, and any other electronic devices must be turned off while in class.
   3. Recording devices may be used except during test reviews and when otherwise stated by the instructor.
   4. Lap top computers, i-pad... may be used to take notes during class but may not be used to “surf” the internet, look-up answers, nor anything not directly related to note taking.
   5. It shall be considered a breach of academic integrity (cheating) to use or possess on your body any of the following devices during any examination unless it is required for that examination and approved by the instructor: Cell phone, smart watch/watch phone, laptop, tablet, electronic communication devices (including optical), and earphones connected to or used as electronic communication devices.
      • This is a violation of the Radiologic Technology Student Handbook and will result in dismissal from the program.
   Students with special needs and/or medical emergencies or situations should communicate with their instructor regarding individual exceptions/provisions. It is the student’s responsibility to communicate such needs to the instructor.
   6. Do not bring children to class.
7. **Attendance Policy**: Class attendance is important to ensure that a student receives the knowledge and skills necessary to be successful in the Radiologic Technology program. Students are expected to be in class on time. If a student is tardy they may enter only if they do so quietly.

When it becomes necessary to miss a session, it is the responsibility of the student to contact the instructor and to inquire about assignments. I will not distribute the PowerPoints missed. The student must get the notes from a classmate. If a major test is missed, the test will be administered at the first day the student returns to class or at a time designated by the instructor. There will be a **ten (10) point** reduction for make-up exams.

**Technical Requirements (for courses using Blackboard)**

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at: [https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy](https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy)  A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

**Disabilities Statement**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building. You may also visit the online resource at [http://www.lit.edu/depts/stuserv/special/defaults.aspx](http://www.lit.edu/depts/stuserv/special/defaults.aspx)

**Student Code of Conduct Statement**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the LIT Catalog and Student Handbook. The LIT Catalog and Student Handbook may be accessed at [www.lit.edu](http://www.lit.edu) or obtained in print upon request at the Student Services Office. Please note that the online version of the LIT Catalog and Student Handbook supersedes all other versions of the same document

**Starfish**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home
RADR 1411
Course Syllabi - 2018

page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.