Radiographic Pathology-RADR 2217-3A1&5A1

CREDIT
2 semester credit hours (1 hour lecture and 2 hours lab)

MODE OF INSTRUCTION
This course will utilize face-to-face instruction with a multimedia format. The course has an on-line component. If the need arises, the course will move to a fully on-line format. The computer must have a camera and microphone for on-line conferencing.

PREREQUISITE/CO-REQUISITE:
RADR 1411 Basic Radiographic Procedures

COURSE DESCRIPTION
Disease processes and their appearance on radiographic images.

COURSE OBJECTIVES
Upon completion of this course, the student will be able to:

- Classify types of diseases.
- Explain the pathogenesis of common diseases.
- Differentiate between normal and abnormal radiographic findings.
- Correlate normal and abnormal radiographic findings.
- Describe technique adjustments for pathologic conditions.
- Acquaint the student radiographer with basic medical terminology used to describe various conditions occurring in the human body.
- Introduce the student to various specialized imaging techniques.
- Prepare a case study with works cited and slide show for presentation.

INSTRUCTOR CONTACT INFORMATION

Instructor:	Sheryl A. Nance, BAAS, R.T. (R)(CT)
Email:	sanance@lit.edu
Office Phone:	409.247.5093
Office Location:	MPC Office 231
Office Hours:	Tuesday/Thursday 10:15am-12pm

REQUIRED TEXTBOOK AND MATERIALS
- Eisenberg, Ronald: *Radiographic Pathology*, 7th edition, Mosby Inc., 2012. ISBN# 978-0-323-07847-4
- A computer with internet access. The computer must be able to run current programs and platforms such as Windows 10 and the internet connection must be reliable and robust. The course has an on-line component. If the need arises, the course will move to a fully on-line format. The computer must have a camera and microphone for on-line conferencing.
- Medical Dictionary (access on-line is acceptable)
- #882 Scantrons and pencils

ATTENDANCE POLICY
Each student is responsible for attending every class session. When it becomes necessary to miss a session, it is the responsibility of the STUDENT to contact the instructor and to inquire about assignments.

To encourage class attendance, students that miss two (2) or more class sessions in a unit for a test will have a 5-point reduction on that test. Students who are tardy for class four (4) times will equal one (1) absence.

When the student has missed sufficient hours and material to cause a drop in grade points (by missing class discussions, participation, quizzes, major test and or assignments) the instructor will notify the student in writing concerning the possibility of failing the course. The student should respond and meet the instructor for counseling.

If a student wants to drop a course, the student is responsible for initiating and completing the drop process. If a student stops coming to class and fails to drop the course, the student will receive an 'F' in the course.

Please email or call the instructor if you miss a major test. Students must request a make-up examination from the instructor. The administration of the make-up test will be on the first day the student returns to class or at a time designated by the instructor. There will be an automatic 10-point reduction on the make-up exam unless extenuating circumstances exist.

DROP POLICY
If you wish to drop a course, you are responsible for initiating and completing the drop process by the specified drop date as listed on the Academic Calendar. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE CALENDAR

Date	Topic	Assignment	Chapter
Jan 20, 2026	Introduction to course & Ch. 1 Introduction to Pathology		**Ch. 1**
Jan 22	Ch. 1 cont. & Ch. 2 Specialized Imaging Techniques		Ch. 1 & 2
Jan 27	Neoplasm		**Not in book**
Jan 29	Neoplasm cont.	**Topic Due**	**Not in book**
Feb 3	Ch. 4 Skeletal System		**Ch. 4**
Feb 5	Ch. 4 Skeletal System & Review	**1st Article due**	**Ch. 4**
Feb 10	**TEST I**		
Feb 12	Go over test & Ch. 3 Respiratory System	**2nd Article due**	**Ch. 3**
Feb 17	Ch. 3 Respiratory System		**Ch. 3**
Feb 19	Ch. 3 Respiratory System	**Outline due**	**Ch. 3**
Feb 24	Ch. 7 Cardiovascular System		**Ch. 7**
Feb 26	Ch. 7 Cardiovascular System		**Ch. 7**
Mar 3	Ch. 9 Hematopoietic System & review		**Ch. 9**
Mar 5	**TEST II**		
Mar 10-12	**SPRING BREAK**		
Mar 17	Go over test & Ch. 5 Gastrointestinal System		**Ch. 5**
Mar 19	Ch. 5 Gastrointestinal System	**Reference pg. & Slideshow Due**	**Ch. 5**
Mar 24	Ch. 5 Gastrointestinal System		**Ch. 5**

Mar 26	Ch. 5 Hepatobiliary		**Ch. 5**
Mar 31	Ch. 6 Urinary System		**Ch. 6**
Apr 2	Ch. 6 Urinary System & Review		**Ch. 6**
Apr 7	**TEST III**		
Apr 9	Go over Test III & Ch. 8 Nervous System		**Ch. 8**
Apr 14	Ch. 8 Nervous System		**Ch. 8**
Apr 16	Ch. 10 Endocrine System		**Ch. 10**
Apr 21	Ch. 11 Reproductive System		**Ch. 11**
Apr 23	Ch. 12 Miscellaneous Diseases & Review		**Ch. 12**
Apr 28	Finish Ch.12		
Apr 30	**TEST IV**		
May 5	Presentations		
May 12, Tuesday	*COMPREHENSIVE FINAL –Room 109, 9:15am-10:45am*		

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

- There will be four (4) major tests and a comprehensive final exam.
- The student will present a pathology report and case study to the class. This presentation counts as a major test grade.
- The course includes pop quizzes and homework. Missed quizzes will be given a grade of zero "0". Missed pop quizzes cannot be made up, but the lowest quiz/homework grade will be dropped at the end of the semester. Quiz and homework average will count for

one (1) test grade. Late homework/assignments will be accepted but with a 10-point penalty. There is a 10-point reduction for each class day the assignment is late.

- **MANDATORY REMEDIATION**
  Any student who fails to pass a Unit test with at least a 77 will be required to attend mandatory tutorial. This may be done before or after class or during the lunch break. The tutorial may be individual or in a group session. There will be remediation assignments in Clover Learning Student Plan. These must be successfully completed by the due date or two points will be deducted from the test grade for every class it is late.

COURSE REQUIREMENTS:
- **(4) Major examinations (15% each)**   **60%**
- **Pathology Case Presentation**   **15%**
- **Homework & Quizzes**   **15%**
- **Comprehensive Final**   **10%**

GRADING SCALE
Numeric to letter grade conversion:
   A=93-100
   B=84-92
   C=77-83
   D=65-76
   F=64 and below

A MINIMUM OF 77% IS REQUIRED FOR SUCCESSFUL COMPLETION OF THIS COURSE
LIT does not use +/- grading scales

TICKET TO TEST
Students are to legibly hand write notes to complete the Unit Exam Reviews that are posted in Blackboard for each Unit. These detailed reviews will be turned in the day of the exam before the exam starts. If the student does not have the review complete then there will be a five-point deduction for their exam. These will be returned to the student. Keep these reviews in a notebook or folder. They will help you study for the final exam and the capstone course that is taught in the last semester RADR 2335 Radiology Seminar (Reg Review) and the ARRT national Registry exam.

TECHNICAL REQUIREMENTS
The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at https://lit.edu/online-learning/online-learning-minimum-computer-requirements. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT
The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at Special Populations - Lamar Institute of Technology (lit.edu).

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. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

ARTIFICIAL INTELLIGENCE STATMENT

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI / ChatGPT in their courses.

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 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.

ADDITIONAL COURSE INFORMATION/POLICIES

COURSE POLICIES:
- **Students should keep electronic devices (Cell phones, ear buds, smartwatches, etc.) off during class. Students must keep these devices at the front of the classroom during tests.**
- **No food, drinks, or use of tobacco products in class.**
- **Do not bring children to class.**
- **Audio and video recording devices (i.e. smart glasses) may be used *except* during test reviews and when otherwise stated by the instructor.**
- **A computer with internet access is required for the course. The computer must be able to run current programs and platforms such as Windows 10 and the internet must be reliable and robust. The course has an on-line component. If the need arises, the course will move to an on-line format. The computer must have a camera and microphone for online conferencing.**
- **Lap top computers, I-pad…may be used to take notes during class but can<u>not</u> be used to "surf" the internet, look-up answers, nor anything not specifically related to note taking.**

STUDENT EXPECTED TIME REQUIREMENT
For every hour in class (or unit of credit), students should expect to spend at least two to three hours per week studying and completing assignments. For a 3-credit-hour class, students should prepare to allocate approximately six to nine hours per week outside of class in a 16-week session OR approximately twelve to eighteen hours in an 8-week session. Online/Hybrid students should expect to spend at least as much time in this course as in the traditional, face-to-face class.

ACADEMIC DISHONESTY
Students found to be committing academic dishonesty (cheating, plagiarism, or collusion) may receive disciplinary action. Students need to familiarize themselves with the institution's Academic Dishonesty Policy available in the Student Catalog & Handbook at
http://catalog.lit.edu/content.php?catoid=3&navoid=80#academic-dishonesty.

COURSE OUTLINE:
I.   **CHAPTER 1: Introduction to Pathology**
   A.   Classify the more common diseases in their attenuation of x-rays
   B.   Determine the technical factor changes required for obtaining optimal quality radiographs in patients with various pathological conditions
      1.   additive diseases
      2.   destructive diseases
   C.   Define disease terminology

D.   Classify diseases by their origin
1. genetic and congenital
2. acquired and inflammatory
3. altered cell growth

E.   Discuss the causes of disease
1. endogenous
2. exogenous
3. idiopathic
4. iatrogenic
5. nosocomial

F.   Describe the various immune reactions of the body

G.   Discuss the leading causes of death in the United States

H.   Discuss the leading causes of death in Texas

II.   **CHAPTER 2: Specialized Imaging Techniques**

A.   Describe the theory of image production with special modalities and the body structures best demonstrated by each
1. ultrasound
2. computed tomography
3. magnetic resonance imaging
4. positron emission tomography
5. nuclear medicine

III.   **Neoplasia**

A.   Discuss the different types of altered cell growth
1. atrophy
2. hypoplasia
3. hyperplasia
4. hypertrophy
5. neoplasia

B. List the routes of metastasis
1. seeding
2. lymphatic
3. hematogenous

C. Describe the different types of cancer
1. carcinoma
2. sarcoma
3. lymphoma
4. leukemia

D. Describe the method classifying a malignancy
1. grading
2. staging

E. List the risk factors of cancer using the American Cancer Society pre-screening recommendations

F. Discuss cancer statistics

G. Define some methods of cancer treatment

       1. chemotherapy
       2. radiation therapy
       3. surgery
       4. immunotherapy
       5. hormone therapy

IV.   CHAPTER 3: Respiratory System

  A. Classify the more common diseases in their attenuation of x-rays and the technical factor changes required for obtaining optimal quality radiographs
      1. Additive disease
      2. Destructive disease

  B. Describe the physiology and functions of the respiratory system

  C. Identify structures on both diagrams and radiographs of the respiratory system

  D. Describe pathology of the respiratory system and their radiographic manifestations

1. Chronic
2. Acute
3. congenital
4. Inflammatory
5. Neoplasia
    a. benign
    b. malignant

V.   CHAPTER 4: Skeletal System

  A. Classify the more common diseases in their attenuation of x-rays and the technical factor changes required for obtaining optimal quality radiographs
      1. additive disease
      2. destructive disease

  B. Describe the physiology and functions of the skeletal system

  C. Identify structures on both diagrams and radiographs of the skeletal system

  D. Describe pathology of the skeletal system and their radiographic manifestations
    1. congenital
    2. inflammatory
    3. neoplasia
      a. benign
      b. malignant
    4. fractures
    5. vertebral disorders

  E. Utilize creative thinking skills to alter position of the tube/film/patient during trauma and fracture radiography

VI.   CHAPTER 5: Gastrointestinal System

  A. Classify the more common diseases in their attenuation of x-rays and the technical factor changes required for obtaining optimal quality radiographs
    1. additive disease
    2. destructive disease

  B. Describe the physiology and function of the gastrointestinal system

  C. Identify structures on both diagrams and radiographs of the gastrointestinal system

D. Describe pathology of the gastrointestinal system and their radiographic manifestations
 1. esophagus
    a. congenital
    b. inflammatory
    c. neoplasia
        1. benign
        2. malignant
 2. stomach
    a. congenital
    b. inflammatory
    c. neoplasia
        1. benign
        2. malignant
 3. small bowel
    a. congenital
    b. inflammatory
    c. neoplasia
        1. benign
        2. malignant
 4. large intestine
a. congenital
    b. inflammatory
    c. neoplasia
        1. benign
        2. malignant
 E. Be familiar with the special procedures that are used when imaging particular pathologic conditions
VII.   **CHAPTER 6: Urinary System**
   A.   Classify the more common diseases in their attenuation of x-rays
   B.   Describe the physiology and function of the urinary system
   C.   Identify structures on both diagrams and radiographs of the urinary system
   D.   Describe pathology of the urinary system and their radiographic manifestations
    1. congenital
    2. inflammatory
    3. neoplasia
        a. benign
        b. malignant
   E.   Be familiar with the special procedures that are used when imaging particular pathologic conditions
VIII.   **CHAPTER 7: Cardiovascular System**
   A. Describe the physiology and function of the cardiovascular system
   B. Identify structures on both diagrams and radiographs of the cardiovascular system
   C. Describe pathology of the cardiovascular system and their radiographic manifestations
    1. congenital

2. acquired vascular
3. valve disorders
D. Be familiar with the special procedures that are used when imaging particular pathologic conditions

IX. **CHAPTER 8: Nervous System**
A. Describe the physiology and function of the nervous system
B. Identify structures on both diagrams and radiographs of the nervous system
C. Describe pathology of the nervous system and their radiographic manifestations
1. congenital
2. infections
3. neoplasia
a. benign
b. malignant
4. trauma
5. vascular
6. degenerative
D. Be familiar with the special procedures that are used when imaging particular pathologic conditions

X. **CHAPTER 9: Hematopoietic System**
A. Describe the physiology and function of the hematopoietic system
B. Identify basic blood structures on diagrams
C. Describe pathology of the hematopoietic system and their radiographic manifestations
1. RBC
2. WBC
3. Platelets

XI. **CHAPTER 10: Endocrine System**
A. Describe the physiology and function of the endocrine system
B. Identify structures on both diagrams and images of the endocrine system
C. Describe pathology of the endocrine system and their radiographic manifestations
1. adrenal
2. pituitary
3. thyroid
4. parathyroid
5. pancreas
D. Be familiar with the special procedures that are used when imaging particular pathologic conditions

XII. **CHAPTER 11: Reproductive System**
A. Describe the physiology and function of the reproductive system
B. Identify structures on both diagrams and images of the reproductive system
C. Describe pathology of the reproductive system and their radiographic manifestations
1. female
a. congenital
b. inflammatory

             c. neoplasia
- 1. benign
- 2. malignant

      2. male
- a. congenital
- b. inflammatory
- c. neoplasia
  - 1. benign
  - 2. malignant

D.   Be familiar with the special procedures that are used when imaging particular pathologic conditions

XIII.   CHAPTER 12: Miscellaneous Diseases

A. Describe nutritional disorders and their possible relationship to disorders of other organs
1. vitamin deficiencies
2. eating disorders

B. Describe miscellaneous disorders and their relationship to all organs
1. Sarcoidosis
2. Lupus
3. Muscular Dystrophy
4. Melanoma

C. Describe hereditary abnormalities

D. Identify correct tube placement
1. Endotracheal tube
2. Central venous catheter
3. Chest tube
4. Pacemaker