

# DMSO 1355 Sonographic Pathophysiology

## CREDIT

3 Semester Credit Hours (3 hours lecture)

## MODE OF INSTRUCTION

Face to Face

## PREREQUISITE/CO-REQUISITE:

## COURSE DESCRIPTION

Pathology and pathophysiology of the abdominal structures visualized with ultrasound.

## COURSE OBJECTIVES

- Identify abnormal sonographic patterns and pathological processes in the organs and structures.

## INSTRUCTOR CONTACT INFORMATION

Instructor: Lacey Stinebrickner, BGS, RDMS

Email: [lfstinebrickner@lit.edu](mailto:lfstinebrickner@lit.edu)

Office Phone: 409-257-0061

Office Location: Gateway Room 112

Office Hours: Please see Starfish to schedule an appointment

## REQUIRED TEXTBOOK AND MATERIALS

1. *Human Diseases, A Systemic Approach*; 8<sup>th</sup> edition; Zelman, Tompary, Raymond, Holdaway, and Mulvihill; ISBN# 978-0-13-342474-4
2. *Computer with webcam for testing*

## ATTENDANCE POLICY

- Students are expected to be in class. Absences must be limited to serious illness and/or immediate family emergencies. Three (3) absences will result in a letter grade reduction. Excessive tardiness (more than 10 minutes/class or more than 2 consecutive classes) will result in an absence being awarded.
- The terminology excused or not excused absence does not apply to this class. All absences are equal. Therefore, no matter the circumstances involved in the student's absence it will be counted towards the total for the semester.
- The sign-in sheet will be taken up 15 minutes after class starts. If you are more than 15 minutes late to class you will be counted absent. Also, if you leave the classroom for more than 15 minutes you will be counted absent.



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- When absent, the student is required to contact the instructor to obtain make-up assignment for missed class. It is the student's responsibility to make up lab assignments or a grade of zero will be given

## **DROP POLICY**

If you wish to drop a course, you are responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

## **COURSE CALENDAR**

<b>DATE</b>	<b>TOPIC</b>	<b>READINGS (Due on this Date)</b>	<b>ASSIGNMENTS (Due on this Date)</b>
8/27	Syllabus; Introduction to Disease	Chapter 1	
8/29	Immunity and Diseases	Chapter 2	
9/3	Continued		
9/5	Infectious Diseases	Chapter 3	
9/10	Continued		CDC Research Assignment bring to class 9/5; Unit I Quiz due by 11:59 pm
9/12	Exam #1 In Class		
9/17	Review Test Cancer/Neoplasia	Chapter 4	
9/19	Continued		
9/24	Continued/Hereditry & Disease	Chapter 5	
9/26	Continued		Unit II Quiz due by 11:59 pm
10/1	Exam #2		
10/3	Diseases of the GI System	Chapter 9	
10/8	Review Test/ Diseases of the Liver & Biliary System		
10/10	Continued		
10/15	Diseases of the Pancreas		Unit III Quiz due by 11:59 pm
10/17	Exam #3		
10/22	Diseases of the Urinary System	Chapter 10	
10/24	Review Test/Continued		

10/29	Diseases and Disorders of the Reproductive System	Chapter 11	
10/31	Continued		
11/5	Continued		Unit IV Quiz due by 11:59 pm
11/7	Exam #4		
11/12	Diseases of the Endocrine System	Chapter 12	
11/14	Continued		
11/19	Continued		
11/21	Continued		Unit V quiz due by 11:59 pm
Happy Thanksgiving!!			
11/26	Review		
12/3	Final Exam		

\* This schedule is subject to change at the discretion of the instructor.

### **COURSE EVALUATION**

Final grades will be calculated according to the following criteria:

Unit Exams	90%
Unit Quizzes/Homework	10%

### **GRADE SCALE**

- 93-100 A
- 85-92 B
- 77-84 C
- 69-76 D
- 0-68 F

### **Course Outline**

- I. Introduction to Disease
  - A. Terminology
  - B. Manifestations of Disease
  - C. Disease and Diagnosis
  - D. Risk Factors
  - E. Treatment
- II. Immunity
  - A. Terminology
  - B. Lymphatic System
  - C. Specific and Non-specific
  - D. Hypersensitivity
  - E. Autoimmunity
  - F. Immune Deficiency
  - G. Sonographic Patterns
- III. Neoplasia
  - A. Terminology

- B. Types of Neoplasms
    - i. Benign
    - ii. Malignant
  - C. Structure of Neoplasms
  - D. Biology of Neoplasms
  - E. Spread of Neoplasms
  - F. Sonographic Patterns
- IV. Infectious Disease
  - A. Terminology
  - B. Infection
  - C. Contagion
  - D. Microbiologic Injury
  - E. Pyogenic Bacteria
  - F. Aids-Related Infections
  - G. Sonographic Patterns
- V. Developmental, Genetic, and Pediatric Diseases
  - A. Terminology
  - B. Congenital Malformations
  - C. Congenial Deformations
  - D. Genetic Disorders
    - i. Chromosomal
    - ii. Genetic diagnosis
  - E. Pediatric Diseases
    - i. Perinatal Disease
    - ii. Neonatal Disease
  - F. Hemolytic Disease of Newborn
  - G. Sonographic Patterns
- VI. Disorders of Fluid Balance and Blood Flow
  - A. Terminology
  - B. Blood Pressure
  - C. Osmotic Pressure
  - D. Circulation of Lymph and Blood
  - E. Anatomy
  - F. Body Water and Fluid Compartments
  - G. Edema
  - H. Hyperemia and Congestion
  - I. Hemorrhage, Thrombosis, Embolism
  - J. Blood flow obstruction
  - K. Shock
  - L. Sonographic Patterns
- VII. Diseases of Blood Vessels
  - A. Terminology
  - B. Normal Vascular System
  - C. Blood Pressure
  - D. Lipid Classification and Metabolism
  - E. Blood Vessel Disease
  - F. Hypertension
  - G. Aneurysms and dissections
  - H. Diseases of veins
  - I. Tumors of blood and lymphatics
  - J. Sonographic Patterns

- VIII. Diseases of the Heart**
  - A.** Terminology
  - B.** Arrhythmias
  - C.** Congestive Heart Failure
  - D.** Coronary Artery Disease
  - E.** Valvular Heart Disease
  - F.** Endocarditis
  - G.** Myocardial Heart Disease
  - H.** Congenital Heart Disease
  - I.** Sonographic Patterns
- IX. Diseases of the Gastrointestinal System**
  - A.** Terminology
  - B.** Intestinal bleeding
  - C.** Obstruction and ileus
  - D.** Diseases of Esophagus
  - E.** Diseases of Stomach
  - F.** Non-neoplastic Diseases
  - G.** Neoplastic Diseases
  - H.** Diseases of the appendix
  - I.** Sonographic Patterns
- X. Diseases of the Liver and Biliary Tract**
  - A.** Terminology
  - B.** Liver's response to injury
  - C.** Cirrhosis
  - D.** Hepatitis
  - E.** Abscess
  - F.** Toxicity
  - G.** Alcoholic liver disease
  - H.** Hereditary liver disease
  - I.** Disease of Intra-hepatic Bile Ducts
  - J.** Circulatory disorders
  - K.** Tumors
  - L.** Diseases of gallbladder and extra-hepatic bile ducts
  - M.** Sonographic Patterns
- XI. Diseases of the Kidney**
  - A.** Terminology
  - B.** Normal urine and urinalysis
  - C.** Clinical syndromes
  - D.** Glomerular disease
  - E.** Vascular disease
  - F.** Acute tubular necrosis
  - G.** Nephritis
  - H.** Stones
  - I.** Tumors
  - J.** Sonographic Patterns
- XII. Male Genitalia/Reproductive System**
  - A.** Terminology
  - B.** Diseases of lower urinary tract
  - C.** Diseases of genitalia
  - D.** Sexually transmitted diseases
  - E.** Sonographic Patterns

- XIII. Female Genitalia/Reproductive System
  - A. Terminology
  - B. Menopause
  - C. Sexually transmitted diseases
  - D. Vaginal conditions
  - E. Vulvar disease
  - F. Diseases of Uterus and Ovaries
  - G. Diseases of Reproduction
  - H. Sonographic Patterns
- XIV. Diseases of the Endocrine System
  - A. Terminology
  - B. Hormones
  - C. Diagnostic procedures
  - D. Diseases of the anterior pituitary
  - E. Hypofunction of the posterior pituitary
  - F. Diseases of the thyroid
  - G. Diseases of the adrenal gland
  - H. Diseases of the parathyroid
  - I. Abnormalities in secretion of sex hormones
  - J. Sonographic Patterns
- XV. Female Genitalia/Reproductive System

### **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](mailto: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](http://www.lit.edu). 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 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.

## **AI Statement**

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.

## **ADDITIONAL COURSE POLICIES/INFORMATION**

- No food, drinks, or use of tobacco products in class.
- Cellphones and any other electronic devices must be turned off while in class.
- Do not bring children to class.
- All assignments are due at the beginning of class when stated on the addendum. Late assignments will have a 10 point deduction for every class day that the assignment is late. Missed in-class assignments receive a grade of zero.
- Exams will be on the dates specified unless the instructor makes a change. Exams will be in class unless the instructor changes the exam to online.
- If an exam is scheduled online and the exam is turned in past the due date, the student will have a 10 point reduction on his/her test score. The score will continue to drop 10 points for every day following the test. Also, if the student attends any sonography classes on test day, he/she must take the test that day or a zero will be given.
- 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.
  - a. Cheating on any (lecture/lab) exam results in immediate dismissal from the program and an F for the course.

- In the case that your exam is online. You will be using LockDown Browser with Webcam Monitoring if the exam is done at home. The rules for the tests are:
  - Disable all notifications on your computer. This is how LockDown Browser is used to take a test.
  - Locate the “LockDown Browser” shortcut on the desktop and double-click it. (For Mac users, launch “LockDown Browser” from the Applications folder.)
  - If prompted to close a blocked program (e.g. screen capture, instant messaging) choose Yes.
  - Log into the course, navigate to the test and select it.
  - A Startup Sequence will guide the student through a webcam check and other items required by the instructor.
  - The test will then start.

20-point deductions for each occurrence:

- Where you are taking your exam must be well lit. If it is not well lit, you will have 20 points deducted from your test.
  - Your face must be visible the entire length of the test. If your face cannot be seen even for a few seconds you will have 20 points deducted from your test.
  - No music should be playing nor should a TV/radio/video be on in the background.
  - You may not read the questions out loud. If you do so, you automatically receive a 20-point deduction.
  - You may not wear sunglasses, hats, hoodies, earbuds, headphones, etc. during the exam. Your ears must be fully visible the entire exam, failure to comply with this will be a 20-point deduction. If you do this on another exam it will turn into a 50-point deduction

50-point reduction or a zero on the entire test

- You must be in a private location. If another person is seen or heard while you are taking your test this could be misconstrued as cheating resulting in a 50-point reduction or a zero. That is up to the situation and your instructor.
- All phones, notes, books, and other papers must be removed from the testing location. If these items are seen during your exam, you receive an automatic zero on the exam.
- Do NOT leave the exam room for any reason, if you do, it is an automatic 50-point deduction.
- Any suspicious activity that appears to be cheating will result in a zero.

### Testing Tips

1. You must use **Google Chrome browser**.
  - You must have a webcam and a microphone attached to your computer
  - Be prepared to scan the room with a camera, if you cannot move your computer, you will need to have a mirror available to assist with scanning the room.



2. It is the student's responsibility to ensure that ALL of the above requirements are met. By completing the verify signature portion of the exam, you are accepting responsibility for your actions during the exam. Failure to follow the requirements will result in deductions from your exam grade when reviewed by your Instructor.

- There is no extra credit given for this course.
- You be given 1 ½ minute per question on your exam. No extra time will be given.
- **You will get one test reset per semester if your exam is online.**