

## **Sonographic Pathophysiology (DMSO 1355)**



**Credit:** 3 semester credit hours (3 hours of lecture)

**Prerequisite/Co-requisite:** DMSO 1110, DMSO 1351

### **Course Description:**

Pathology and pathophysiology of the abdominal structures visualized with ultrasound. Includes abdomen, pelvis, and superficial structures.

### **Required Text and Materials**

1. *Human Diseases, A Systemic Approach*; 7<sup>th</sup> edition; Zelman, Tomparry, Raymond, Holdaway, and Mulvihill  
ISBN # 978-0-13-515556-1

### **Course Objectives**

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

1. Describe the impact of organ pathology on organ function. (Scan C5.5, C6.5, C7.5, F1.5, F2.5, F3.5, F10.5, F11.5)
2. Discuss etiology, clinical signs and symptoms, predisposing factors, and diagnostic procedures of specific disease processes. (Scan C5.5, C6.5, C7.5, C18.5, C19.5)
3. Identify pathologic processes in specified organ structures. (Scan C5.5, C6.5, C7.5, F1.5, F2.5, F5.5, F10.5, F11.5)
4. Recognize abnormal Sonographic patterns of the abdomen, reproductive and urinary systems, and superficial structures. (Scan C5.5, C6.5, C7.5, C18.5, C19.5)
5. To critically read scholarly research in the medical literature. (Scan C5.5, C6.5, C7.5, C8.5, F1.5, F5.5, F6.5, F7.5, F7.5, F11.5)

### **SCANS Skills and Competencies**

Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its research, the Commission determined that "workplace know-how" consists of two elements: foundation skills and workplace competencies.

## **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
- III. Neoplasia
  - A. Terminology
  - B. Types of Neoplasms
    - i. Benign
    - ii. Malignant
  - C. Structure of Neoplasms
  - D. Biology of Neoplasms
  - E. Spread of Neoplasms
- IV. Infectious Disease
  - A. Terminology
  - B. Infection
  - C. Contagion
  - D. Microbiologic Injury
  - E. Pyogenic Bacteria
  - F. Aids-Related Infections
- 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
- 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
- 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
- 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
- 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

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- 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
- 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
- XII. Male Genitalia/Reproductive System
  - A. Terminology
  - B. Diseases of lower urinary tract
  - C. Diseases of genitalia
  - D. Sexually transmitted diseases
- 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

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**Grade Scale:**

93-100	A
85-92	B
75-84	C
70-74	D
73.5	F

**Course Evaluation**

1. Course Assignments	15%
2. Pop Quizzes	10%
3. Unit Exams	25%
4. Final Exam	50%

Students must maintain a 75% overall exam average and must receive a 75% on final exam to pass this course.

**Course Requirements**

1. Reading assignments
2. Web Searches
3. Power Point Presentation
4. Unit Exams
5. Final Exam

**Course Policies**

**General:**

1. Students must provide their own textbooks, writing instruments, and other necessary supplies for classes.
2. Pagers, cell phones, and any other electronic devices must be turned off during class.
3. No food or drinks will be allowed in the classroom.
4. Students must respect faculty and all others.

**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 located in the Cecil Beeson Building.

## Course Schedule

Date	Topic	Required Reading
Week 1	<b>Part I Mechanisms of Disease</b>	
	Introduction to Disease	Chapter 1
Week 2	Immunity and Lymphatic System	Chapter 2
Week 3	Infectious Diseases	Chapter 3
Week 4	Cancer/Neoplasia	Chapter 4
Week 5	Heredity and Disease	Chapter 5
Week 6	<b>Part II Diseases of the System</b>	
Week 7	Diseases of the Cardiovascular System	Chapter 6
Week 8	Diseases of Blood	Chapter 7
Week 9	Diseases of Gastrointestinal System	Chapter 9
Week 10	Diseases Liver & Biliary System	
Week 11	Diseases of the Pancreas	
Week 12	Diseases of the Urinary System	Chapter 10
Week 13	Diseases and Disorders of the Reproductive System	Chapter 11
Week 14	Diseases of the Endocrine System	Chapter 12
Week 15	Power Point Presentation	
Week 16	Final Exam	

### Contact Information:

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