

# DMS-2330: SONOGRAPHIC PATHOLOGY

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## Cuyahoga Community College

### Viewing: DMS-2330 : Sonographic Pathology

**Board of Trustees:**

MAY 2025

**Academic Term:**

Fall 2025

**Subject Code**

DMS - Diagnostic Medical Sonography

**Course Number:**

2330

**Title:**

Sonographic Pathology

**Catalog Description:**

Specialized study of common disease processes relevant to sonographic imaging. Discussion of differences between inflammatory and infectious diseases, congenital, acquired, and hereditary diseases, and benign, malignant, and metastatic neoplasia in the cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary systems.

**Credit Hour(s):**

3

**Lecture Hour(s):**

3

### Requisites

**Prerequisite and Corequisite**

BIO-2341 Anatomy and Physiology II; and DMS-1303 Introduction to Sonography; and HTEC-1050 Introduction to Medical Terminology, or HTEC-1060 Medical Terminology I; and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test.

Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

### Outcomes

**Course Outcome(s):**

Provide an explanation of the manifestations of sonographic related diseases from one body system to another.

**Objective(s):**

1. Identify and relate the differences between inflammatory and infectious diseases of the cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary systems.
2. Identify and relate the differences between congenital, acquired, and hereditary diseases of the cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary systems.
3. Classify the physiologic differences between benign, malignant, and metastatic neoplasia of the cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary systems.

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**Methods of Evaluation:**

1. Class participation
2. Final examination
3. Homework assignments
4. Oral/Written quizzes

5. Research/Semester project

6. Written tests

**Course Content Outline:**

1. Concepts
  - a. Pathology
  - b. Pathophysiology
  - c. Definition of disease
  - d. Classification of diseases
  - e. Etiology
  - f. Manifestation of diseases
  - g. Diagnosis
  - h. Complications
  - i. Pathogens
  - j. Differential diagnosis
2. Skills
  - a. Critical thinking
  - b. Recognize how complications impact other body systems
  - c. Identify signs and symptoms of disease
  - d. Relate patient history to symptoms
3. Issues
  - a. Medical ethics
  - b. Legal
  - c. Differential diagnosis
  - d. Immunization
  - e. Standard Precautions

**Topical Outline**

1. Disease
  - a. Homeostasis
  - b. Signs/symptoms/syndromes
  - c. Etiology
  - d. Diagnosis
  - e. Classifications of disease
    - i. Acute
    - ii. Chronic
    - iii. Relapse
    - iv. Terminal
  - f. Complications of disease
2. Inflammatory diseases
  - a. Definition
  - b. Signs/symptoms
  - c. Etiology
  - d. Immunity
  - e. Sonographic related pathology
3. Infectious diseases
  - a. Definition
  - b. Pathogens
  - c. Vaccination
  - d. Sonographic related pathology
4. Hereditary and Congenital diseases
  - a. Definition
  - b. Genetics
  - c. Autosomal Dominant
  - d. Autosomal Recessive
  - e. Sex-linked inheritance
  - f. Sonographic related pathology
5. Neoplasm - Benign, Malignant, Metastatic

- a. Definitions
- b. General characteristics
- c. Classification of benign tumors
- d. Etiology of cancer
- e. Risk factors
- f. Signs/symptoms of benign and malignant neoplasm
- g. Types of cancer
- h. Sonographic related pathology
- 6. Cardiovascular system
  - a. Blood disorders
  - b. Sonographic related diseases of the heart
    - i. Acquired
    - ii. Infectious
    - iii. Congenital
  - c. Sonographic related diseases of blood vessels
    - i. Acquired
    - ii. Inflammatory
- 7. Digestive system
  - a. Clinical display of disease
  - b. Sonographic related diseases (Liver, Biliary, Pancreas [as exocrine gland])
    - i. Inflammatory diseases
    - ii. Acquired diseases
    - iii. Benign neoplasm
    - iv. Malignant neoplasm
- 8. Endocrine system
  - a. Adrenal gland disorders
  - b. Thyroid disorders
  - c. Parathyroid gland disorders
  - d. Pancreas disorders (as endocrine gland)
- 9. Lymphatic system
  - a. Immunity
  - b. Sonographic related pathology
- 10. Respiratory system
  - a. Symptoms of respiratory disorders
  - b. Sonographic related disorders
- 11. Reproductive system
  - a. Female
    - i. Inflammatory disorders
    - ii. Benign neoplasm
    - iii. Malignant neoplasm
  - b. Male
    - i. Inflammatory disorders
    - ii. Benign neoplasm
    - iii. Malignant neoplasm
- 12. Urinary system
  - a. Renal failure
  - b. Congenital anomalies
  - c. Inflammatory disorders
  - d. Obstructive disorders
  - e. Benign neoplasm
  - f. Malignant neoplasm

## Resources

Zelman, Mark, et al. *Human Diseases: A Systematic Approach*. 8th ed. Upper Saddle River: Prentice Hall, 2015.

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Henningsen, Charlotte. *Clinical Guide to Sonography: Exercises for Critical Thinking*. 2nd ed. St. Louis: Mosby, 2014.

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Patton, Kevin and Gary A Thibodeau. *The Human Body in Health and Disease*. 6th ed. Maryland Heights: Elsevier Mosby, 2014.

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Pellerito, John S. and Joseph F. Polak, eds. *Introduction to Vascular Ultrasonography*. 6th ed. Philadelphia: Saunders, 2012.

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Hoda, Syed et al. *Rosen's Breast Pathology*. 4th ed. Philadelphia, PA: Lippincott Williams Wilkins, 2014.

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Loeffler, Agnes G & Hart, Michael N. *Introduction to Human Disease: Pathophysiology for Health Professionals*, Burlington, Jones & Bartlett Learning.

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Kawamura, Diane M. & Nolan, Tanya D. (2018) *Diagnostic Medical Sonography: Abdomen and Superficial Structures*, Philadelphia: Wolters Kluwer.

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