



DMS-501: PATHOPHYSIOLOGY I (FORMERLY DMS-101)

Effective Term

Fall 2026

BOT Approval Date

01/15/2026

Discipline

DMS - Diagnostic Medical Sonography

Course Number

501

Course Title

Pathophysiology I (formerly DMS-101)

Short Title

Pathophysiology I

Credit Status (CB 04)

D - Credit - Degree applicable

Units**Lecture Units**

3.00

Total Units

3.00

Hours**Lecture Contact Hours**

48-54

Out of Class Hours Lecture

96-108

Total Contact Hours

48 - 54

Total Out of Class Hours

96 - 108

Total Student Learning Hours

144 - 162

Distance Education

No

Catalog Description

This course introduces sonography students to the foundational principles of disease processes across major body systems, emphasizing the relationship between anatomy, physiology, and pathology. Designed to support clinical reasoning and patient-centered care, this course prepares students to assess patient history, interpret laboratory data, and correlate signs and symptoms with sonographic findings. Students will explore disease mechanisms through structured content focused on description, etiology, clinical presentation, and diagnostic criteria. Emphasis is placed on understanding how systemic conditions manifest in sonographic imaging and influence scanning protocols. This knowledge is essential for accurate interpretation and effective interdisciplinary communication in clinical practice and in developing clinically proficient, ethically grounded, and culturally competent sonographers equipped to deliver high-quality diagnostic care. (formerly DMS-101)



Requisites

Prerequisite(s)

Prerequisite(s) (must be taken before)

Acceptance into the Diagnostic Medical Sonography Program.

Codes

TOP Code (CB 03)

1227.00* - *Diagnostic Medical Sonography

CIP Code

51.0910 - Diagnostic Medical Sonography/Sonographer and Ultrasound Technician.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Diagnostic Medical Technology	End

Learning Objectives

Learning Objectives

Learning Objective
1. Differentiate key anatomical and physiological structures of the human body to support interpretation of sonographic findings.
2. Analyze the etiology of disease, including genetic, congenital, environmental, and behavioral influences to explain clinical variation.
3. Evaluate patient signs and symptoms in relation to general principles of disease to support accurate clinical assessment.
4. Apply precise medical terminology to describe disease processes in both written and verbal clinical communication.
5. Critique diagnostic, preventive, and therapeutic strategies for common diseases, identifying their relevance to sonographic practice.
6. Integrate laboratory data, imaging results, and physical assessments to formulate differential diagnoses.
7. Synthesize knowledge of degenerative, neoplastic, metabolic, immunological, and infectious diseases across body systems to inform scanning protocols.
8. Compare and contrast developmental, congenital, genetic and childhood disorders and how they are prevented, treated and spread.
9. Assess the impact of racial and cultural factors on the presentation and management of uterine fibroids, and design sonographic strategies that promote equitable, patient-centered care.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Students will describe the fundamental anatomy and physiology of the human body, demonstrating understanding of both the normal and pathology relationships.
2. Students will analyze the etiology of diseases by examining factors such as genetics, congenital conditions, environmental exposures, personal habits, and predisposing factors.
3. Students will differentiate among general disease principles by interpreting patient signs and symptoms to distinguish pathological from normal presentations.

4. Students will evaluate and interpret diagnostic tools—including laboratory tests, imaging studies, and physical assessments—in the context of disease differentiation and diagnosis.
5. Students will apply foundational pathophysiology knowledge to support clinical reasoning and interdisciplinary communication. Students will integrate anatomical, physiological, and pathological concepts to contribute effectively to patient-centered care teams, ensuring culturally competent and evidence-based sonographic practice.
6. Students will identify and describe disease mechanisms across major body systems. Using structured content from textbook sections such as “Description,” “Etiology,” “Signs & Symptoms,” and “Diagnosis,” students will explain how common diseases alter normal physiology and present in clinical settings.

Content

Course Lecture Content

- I. Mechanisms of Disease, Diagnosis, and Treatment
 - A. Mechanisms of Disease
 1. Predisposing Factors
 2. Inflammation and Repair
 3. Infection
 4. Genetic Disease
 - a. Genetic Counseling
 - b. Cancer
 - B. Immune Disorders
 - C. Physical Trauma and Chemical Agents
 - D. Malnutrition
 - E. Aging
 - F. Psychological Factors
 1. Mental Disorders
 - G. Diagnosis of Disease
 1. Pain
 - H. Treatment of Disease
 1. Preventive Health Care
 2. Nontraditional Medicine
 3. Patient Teaching
- II. Developmental, Congenital, and Childhood Diseases and Disorders
 - A. Genetic Disorders and Syndromes
 1. Congenital Cardiac Defects
 2. Musculoskeletal Conditions
 3. Genitourinary Conditions
 - B. Methods of Prenatal Diagnosis
 1. Prematurity
 - C. Diseases of the Nervous, Digestive, Endocrine, and Respiratory Systems
 1. Cerebral Palsy
 2. Spina Bifida
 3. Klinefelter’s Syndrome
 4. Turner’s Syndrome
 - D. Infectious Diseases
 - E. Blood Disorders
- III. Immunologic Diseases and Conditions
 - A. Orderly Function of the Immune System
 - B. Immunodeficiency Diseases
 - C. Hematopoietic Disorders
 1. Anemias

- D. Renal Disorders
- E. Connective Tissue Disorders
 - 1. Arthritis
- F. Neurologic Disorders
- IV. Diseases and Conditions of the Endocrine System
 - A. Orderly Function of the Endocrine System
 - B. Pituitary Gland Diseases
 - C. Thyroid Gland Diseases
 - 1. Hyperthyroidism
 - 2. Hypothyroidism
 - D. Adrenal Gland Diseases
 - 1. Cushing's Disease
 - 2. Addison's Disease
 - E. Pancreas Dysfunction
 - 1. Diabetes Mellitus
- V. Diseases and Conditions of the Integumentary System
 - A. Orderly Function of the Integumentary System
 - B. Dermatitis and Urticaria
 - C. Psoriasis and Rosacea
 - D. Acne and Herpes Zoster (Shingles)
 - E. Dermatophytoses, Scabies, and Pediculosis
 - F. Decubitus Ulcers
 - G. Benign and Premalignant Tumors
 - H. Malignant Tumors
 - 1. Melanoma
 - I. Abnormal Skin Pigmentation
 - J. Abnormal Hair Growth and Nails
- VI. Diseases and Conditions of the Musculoskeletal System
 - A. Spinal Disorders
 - B. Lyme Disease
 - C. Bursitis, Osteomyelitis, and Gout
 - D. Paget's Disease
 - E. Marfan's Syndrome
 - F. Tumors
 - G. Osteoporosis
 - H. Joint Diseases
 - 1. Ganglion Cyst
 - I. Plantar Fasciitis
 - J. Tendon and Ligament Tears and Injury
- VII. Diseases and Conditions of the Digestive System
 - A. Orderly Function of the Digestive System
 - B. Esophageal Diseases
 - 1. Esophageal Cancer
 - 2. Esophageal Varices
 - C. Ulcers
 - 1. Gastric Ulcer
 - 2. Duodenal Ulcer
 - D. Appendicitis
 - E. Hernia

- F. Crohn's Disease and Ulcerative Colitis
- G. Diverticulosis and Diverticulitis
- H. Liver, Biliary Tree, and Pancreas Diseases
 - 1. Cirrhosis
 - 2. Hepatitis A, B, C
- I. Anorexia and Bulimia
- VIII. Diseases and Conditions of the Respiratory System
 - A. Orderly Function of the Respiratory System
 - B. Infection and Inflammation
 - C. Nasal Dysfunction
 - 1. Deviated Septum
 - 2. Polyps
 - 3. Anosmia
 - 4. Epistaxis
 - D. Lung Dysfunction
 - 1. Atelectasis
 - 2. Pulmonary Embolism
 - 3. Pneumonia
 - 4. Asthma
 - 5. Emphysema
 - E. Fungal and Bacterial Infections
 - 1. Legionellosis
 - 2. RSV
 - 3. Histoplasmosis
 - 4. Influenza
 - 5. COPD
 - 6. Lung Cancer
 - F. Bronchitis
 - G. Thoracic Cavity Conditions
 - 1. Pneumothorax
 - 2. Hemothorax
 - H. Tuberculosis
 - I. Infectious Mononucleosis
- IX. Diseases and Conditions of the Circulatory System
 - A. Orderly Function of the Circulatory System
 - B. Angina and Myocardial Infarction
 - C. Congestive Heart Failure (CHF)
 - D. Pulmonary Edema
 - E. Cardiomyopathy
 - F. Pericarditis, Myocarditis, Endocarditis
 - G. Rheumatic Fever
 - H. Arrhythmias, Shock, Cardiac Tamponade
 - I. Vascular Conditions
 - 1. Emboli
 - 2. Arteriosclerosis
 - 3. Atherosclerosis
 - 4. Aneurysms
 - 5. Phlebitis and Varicose Veins
 - J. Anemias

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1. Polycythemia
 2. Thrombocytopenia
 - K. Malignant Conditions
 1. Acute Lymphocytic Leukemia
 2. Chronic Lymphocytic Leukemia
 - L. Lymphatic Diseases
 1. Lymphedema and Lymphangitis
 2. Lymphoma
 - a. Hodgkin's
 - b. Non-Hodgkin's
 - X. Diseases and Conditions of the Urinary System
 - A. Orderly Function of the Urinary System
 - B. Glomerulonephritis
 1. Acute
 2. Chronic
 - C. Renal Failure
 1. Acute
 2. Chronic
 - D. Hydronephrosis
 - E. Renal Calculi
 - F. Polycystic Kidney Disease
 - G. Renal Cell Carcinoma
 - H. Bladder Tumors
 - XI. Diseases and Conditions of the Reproductive System
 - A. Normal Functioning Reproductive System
 - B. Sexually Transmitted Diseases (STDs)
 - C. Infertility
 - D. Male Reproductive Diseases
 1. Epididymitis
 2. Orchitis
 3. Testicular Torsion
 - E. Female Reproductive Diseases
 1. Amenorrhea
 2. Ovarian Cysts
 3. Endometriosis
 4. Uterine Leiomyomas (Fibroids)
 5. Cancer
 - a. Ovarian
 - b. Endometrial
 - c. Vaginal
 - F. Conditions and Complications of Pregnancy
 1. Hyperemesis
 2. Ectopic Pregnancy
 3. Placenta Abruption
 4. Placenta Previa
 - G. Conditions and Complications of disease in diverse populations
 1. Race
 2. Ethnicity
 3. Socioeconomic status

- 4. Language barriers
- G. Breast Disorders
 - 1. Fibrocystic Changes
 - 2. Breast Cancer
- XII. Neurologic Diseases and Conditions
 - A. Vascular Disorders
 - B. Head Trauma
 - C. Herniated and Bulging Discs
 - D. Migraine
 - E. Epilepsy
 - F. Parkinson's Disease
 - G. Huntington's Chorea
 - H. Cerebrovascular Accident (CVA) and Transient Ischemic Attack (TIA)
 - I. Infectious Disorders
 - 1. Encephalitis
 - 2. Guillain-Barré Syndrome
 - 3. Poliomyelitis
 - J. Intracranial Tumors
- XIII. Disorders and Conditions Resulting From Trauma
 - A. Open Trauma
 - 1. Abrasions and Lacerations
 - B. Foreign Bodies
 - C. Thermal Injuries/Burns
 - 1. Including Electric Shock and Lightning Injuries
 - D. Hyperthermia and Hypothermia
 - E. Bites
 - 1. Snake, Insect, Animal
 - F. Cumulative Trauma Disorders
 - 1. Carpal Tunnel Syndrome
 - 2. Epicondylitis
 - 3. Thoracic Outlet Syndrome
- XIV. Appendix I – Common Laboratory and Diagnostic Tests
 - A. Blood Analysis
 - B. Blood Chemistries
 - C. Coagulation Studies
 - D. Glucose Monitoring
 - E. Cardiac Enzymes
 - F. Urinalysis
 - G. Imaging Studies
 - H. Screening Tests
 - 1. Mammogram
 - 2. Pap Smear
 - 3. CA#125
 - 4. Prostate-Specific Antigen (PSA)
 - 5. Tuberculosis Screening

Methods of Instruction

Method

Activity

Integration

Faculty will facilitate small-group discussions focused on analyzing patient signs and symptoms to support diagnostic decision-making. Through guided critique and peer collaboration, students will evaluate clinical presentations and determine appropriate imaging and laboratory tests. This activity reinforces clinical reasoning, promotes interdisciplinary thinking, and strengthens the ability to correlate patient history with sonographic findings in the context of systemic disease processes

Method

Film/video Viewing and Discussion

Integration

The faculty instructor will present accessible and captioned videos that relate to human disease processes. Students compare and contrast patient signs ,symptoms, diagnosis, and treatment.

Method

Lecture

Integration

Faculty will deliver structured lectures supported by multimedia tools, including presentation slides, visual models, and instructional handouts, to introduce key concepts in pathophysiology. This method integrates visual aids and guided explanations to reinforce the relationship between anatomy, physiology, and disease mechanisms. Content delivery is designed to support clinical reasoning, diagnostic interpretation, and the integration of patient-centered care principles.

Method

Papers and Reports

Integration

Faculty will assign structured writing activities that guide learners in analyzing disease processes across major body systems. Instruction will emphasize integration of diagnostic methods, laboratory data, and imaging interpretation to support differential diagnosis. This approach reinforces clinical reasoning, encourages synthesis of complex information, and promotes clarity in communicating pathophysiologic concepts relevant to sonographic practice.

Method

In-class Exercises

Integration

Faculty will facilitate small-group discussions in which learners analyze patient histories and apply pathophysiologic reasoning to propose appropriate sonographic approaches. This method promotes clinical decision-making, peer collaboration, and integration of diagnostic strategies aligned with patient-centered care.

Method

Online Activity/Discussion

Integration

Faculty will facilitate an online discussion exploring how disease processes may present differently across diverse populations due to factors such as race, ethnicity, socioeconomic status, and language barriers. The dialogue will encourage reflection on pathophysiology, cultural influences on clinical presentation, implications for sonographic imaging, and strategies for delivering culturally competent, patient-centered care. This method promotes inclusive clinical reasoning and supports the integration of diversity, equity, and inclusion (DEI) principles into diagnostic practice.

Methods of Evaluation

Method

Papers

Integration

Student understanding of disease mechanisms and diagnostic reasoning will be evaluated through structured written communication. Evaluation will emphasize clarity of purpose, accuracy of pathophysiologic content, integration of diagnostic methods, including laboratory and imaging data, and effective use of professional writing standards. Grading criteria will include organization, research quality, adherence to MLA or APA format, and overall coherence and grammar. This method supports the development of clinically proficient, articulate sonographers prepared for interdisciplinary collaboration.

Method

Quizzes

Integration

Student comprehension of pathophysiologic principles will be monitored through regular formative assessments delivered via the course management system. These brief evaluations are designed to gauge immediate understanding of key concepts, reinforce learning, and identify areas requiring further clarification. Results support instructional pacing and promote retention through consistent engagement with course material.

Method

Oral Presentation

Integration

Student performance will be assessed through collaborative case-based discussions and an individual oral presentation. Participation in group discussions will be evaluated for clarity of communication, clinical insight, and contribution to peer learning, with emphasis on interpreting patient scenarios, applying pathophysiologic reasoning, and articulating sonographic approaches. In addition, each student will deliver a graded oral presentation on a selected disease process, demonstrating the ability to synthesize patient history, lab data, signs and symptoms, and sonographic findings. This dual approach supports diagnostic thinking, professional communication, and the development of clinically proficient, ethically grounded sonographers

Method

Class Participation

Integration

Students will be evaluated on their appropriate responses to the prompt. Discussion points will be earned for participation and responses that support their understanding of healthcare challenges in diverse populations.

Assignments

Assignment Type

Writing

In-class and/or outside of class

In-class

Formative or Summative

Summative

Assignment

For your final assignment, you'll choose one of two options: Option 1 is a 5–7 page research paper (MLA or APA format) on a disease process diagnosable by ultrasound, including signs and symptoms, relevant lab tests, sonographic findings, and at least two scholarly sources (not Wikipedia). You'll also create a 10–15 minute slideshow presentation to share your findings during the final class meeting. Option 2 is a formal literature review for the W. Frederick Sample Student Excellence Award, which follows the same structure but with added detail suitable for publication and competition entry. This option offers the chance to win cash prizes, attend the SDMS annual conference, and be published in a professional journal. More details will be reviewed in class.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

Using the information from your written research paper, create a visual teaching tool, such as a slideshow presentation, captioned video, or educational poster, that clearly communicates the disease process you studied. To prepare for leading a classroom discussion, watch the assigned video on effective discussion techniques: Leading Classroom Discussions. Apply these strategies to guide a peer conversation focused on your topic, encouraging clinical insight, respectful dialogue, and collaborative learning.

Assignment Type

Reading

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Each week, you will complete a short quiz based on the "Description," "Etiology," "Signs & Symptoms," and "Diagnosis" sections of the assigned chapter. These quizzes are designed to help you reinforce key concepts, track your understanding, and prepare for applying clinical knowledge in real-world sonographic scenarios. Regular participation supports your success in both classroom learning and clinical reasoning.

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Assignment: Case Study Analysis of Pathophysiology and Sonographic Correlation

Objective: To strengthen your clinical reasoning by analyzing patient scenarios and connecting pathophysiologic mechanisms to sonographic findings.

Complete the following:

Choose a case study example from chapter 8: The digestive system in the course textbook. You will review each patient scenario carefully, extract and summarize relevant clinical history and laboratory data, identify underlying pathophysiologic processes, and explain how these mechanisms may influence sonographic appearance and scanning protocols.

Expectations: Use appropriate medical and sonographic terminology, provide clear, organized responses that demonstrate critical thinking, and submit your analysis in the format provided (worksheet, discussion post, or written report).

Assignment Type

Writing

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

After reviewing the instructor's presentation slides, you and a partner will use AI tools to create a patient case scenario based on a disease covered in the current chapter. Your case should include a patient profile and relevant medical history. Once completed, you'll present your scenario to the class, and other teams will collaborate to determine the likely diagnosis. Use of the course textbook is encouraged to support clinical accuracy and pathophysiologic reasoning. This activity promotes teamwork, diagnostic thinking, and application of sonographic principles.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Online Discussion: Health Disparities in Disease Presentation

Choose a disease process covered in this course (e.g., Type 2 Diabetes, Hypertension, Liver Disease) and explore how it may present differently across diverse populations. Consider how factors such as race, ethnicity, socioeconomic status, or language barriers can influence patient care.

In your initial discussion post, include the following:

1. A brief explanation of the disease's pathophysiology
2. How cultural or systemic factors may impact clinical presentation, diagnosis, or outcomes
3. Ways these disparities could affect sonographic imaging or scanning protocols
4. One strategy for delivering culturally competent, patient-centered care in sonographic practice

Your response should reflect thoughtful analysis and demonstrate an understanding of how social determinants of health intersect with diagnostic imaging. Engage respectfully with your peers to foster inclusive, professional dialogue.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Post a reply to an online discussion prompt which addresses how disease processes may present differently across diverse populations due to factors such as race, ethnicity, socioeconomic status, or language barriers.

Students should respond to the following questions:

1. Briefly describe the disease's pathophysiology.
2. Discuss how cultural or systemic factors may influence its clinical presentation, diagnosis, or outcomes.
3. Explain how these disparities might affect sonographic imaging or scanning protocols.
4. Share one strategy for providing culturally competent, patient-centered care in sonographic practice.

Course Materials

Textbooks

Essentials of Human Diseases and Conditions, 8th Edition
by Tracie Fuqua, BS, CMA (AAMA) (Retired) ISBN: 9780443114526
Copyright: 2025
Publication Date: 10-16-2024

Class Size Information

Class Size

30

Class Size Category

F - Individualized, skills#based instruction/field practice 30

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Diversity and inclusion are infused into this course by emphasizing culturally responsive, gender-affirming, and patient-centered approaches to sonographic care. Students learn to interpret disease processes and imaging findings within the context of varied patient backgrounds, including differences in race, ethnicity, gender identity, sexual orientation, and socioeconomic status. Case studies and clinical scenarios reflect diverse populations, encouraging learners to consider how cultural beliefs, access to care, and anatomical variations influence presentation and diagnosis. Instruction promotes inclusive communication, ethical documentation, and respectful scanning practices, preparing students to deliver equitable, high-quality care across all body systems and patient identities.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

This course promotes equity by designing assignments, instruction, evaluation, content, and interactions to support diverse learners. Inclusive case studies, multimodal teaching, and flexible assessments accommodate varied backgrounds and learning styles. Transparent grading, culturally responsive content, and respectful communication foster a supportive environment where all students can thrive.

Interactions**Explain how the course will incorporate student-to-student interaction.**

This course incorporates student-to-student interaction through structured, clinically focused activities that mirror real-world sonography practice. Students will work in small groups to analyze patient histories, interpret lab results, and correlate signs and symptoms with sonographic findings across major body systems. These collaborative case discussions will emphasize pathophysiologic reasoning and the application of scanning protocols tailored to specific disease processes. In addition, students will deliver oral presentations on selected conditions, sharing diagnostic criteria, sonographic features, and clinical correlations with peers. Through these interactions, students will refine their communication skills, deepen their understanding of systemic pathology, and build confidence in presenting sonographic assessments. These are essential competencies for imaging department collaboration and patient-centered care.

Explain how the course will incorporate instructor-to-student interaction.

Instructor-to-student interaction in this course will be embedded throughout the curriculum to support the development of clinical reasoning, sonographic interpretation, and professional communication. The instructor will facilitate guided analysis of disease processes and their sonographic manifestations through interactive lectures, case-based discussions, and structured questioning. Feedback will be provided on oral presentations, with emphasis on the integration of patient history, laboratory data, and imaging findings. The instructor will also support student learning through targeted commentary on assignments, regular communication via the LMS, and availability for individual consultation. These strategies are designed to promote engagement, clarify complex concepts, and reinforce the application of pathophysiologic principles in diagnostic imaging.

Explain how the course will incorporate student-to-content interaction.

This course promotes student-to-content interaction through multimedia-enhanced lectures, weekly quizzes, case study analysis, and AI-supported scenario creation; all designed to deepen understanding of pathophysiology and sonographic correlation. Students engage directly with textbook material, clinical data, and diagnostic frameworks via visual presentations, structured writing, and online discussions that explore cultural and systemic influences on disease. These activities encourage active learning, critical thinking, and application of course concepts to real-world sonographic practice.

Explain how the course will incorporate student-to-self interaction (metacognitive).

This course incorporates student-to-self interaction by embedding metacognitive reflection into the study of disease processes and sonographic interpretation. Students will routinely assess their understanding of pathophysiology by engaging in activities such as analyzing ultrasound images, reviewing scanning protocols, and writing reflective summaries that connect patient history, lab data, and imaging findings. These tasks encourage students to evaluate their clinical reasoning, recognize gaps in knowledge, and refine their approach to interpreting systemic conditions. By linking sonographic decisions to personal learning strategies, students build self-awareness and foster the habits of lifelong learning essential for professional growth in diagnostic medical sonography.

Key: 1216