



DMS-532: ULTRASOUND PATHOLOGY II (FORMERLY DMS-132)

Effective Term

Fall 2026

BOT Approval Date

01/15/2026

Discipline

DMS - Diagnostic Medical Sonography

Course Number

532

Course Title

Ultrasound Pathology II (formerly DMS-132)

Short Title

Ultrasound Pathology II

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 provides sonography students with a comprehensive understanding of obstetric and gynecologic pathophysiology as it relates to diagnostic imaging. Emphasis is placed on correlating clinical history, laboratory values, and sonographic appearance to identify both normal and abnormal conditions across the female reproductive system and developing fetus. Topics include uterine and ovarian pathology, infertility, first trimester complications, fetal anomalies, chromosomal abnormalities, postpartum conditions, maternal disease, and amniotic fluid assessment. Students will explore the etiology, signs and symptoms, diagnostic criteria, and sonographic presentation of each condition, preparing them to interpret findings and contribute meaningfully to patient-centered care. (formerly DMS-132)



Requisites

Prerequisite(s)

Prerequisite(s) (must be taken before)

DMS-522 (with a grade of C or better) or Diagnostic Medical Sonography Program graduate certificate/degree or Registered Technologist through ARDMS/CCI/ARRT

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. Detect and describe the appearance of pathologic conditions within the female pelvis or fetal survey examination using appropriate sonographic and medical terminology.
2. Detect pathological findings of the uterus, ovaries, fallopian tubes, cervix, pelvic adnexa and bladder as seen on an ultrasound examination.
3. Compare and contrast pelvic and obstetric pathologies seen on ultrasound images with other diagnostic modalities, such as, computed tomography (CT), magnetic resonance imaging (MRI) and nuclear medicine (NM) images.
4. Compare pertinent patient history, signs and symptoms, lab values, and previous diagnostic imaging to establish a possible differential diagnosis prior to beginning an examination.
5. Evaluate possible 1st trimester abnormalities based on patient signs and symptoms, lab values, and last menstrual period prior to beginning a first trimester examination to insure proper and complete evaluation during the examination.
6. Develop proper examination protocols for female pelvic and obstetric examinations to insure complete and thorough examinations are performed.
7. Consider post partum complications and lab values prior to completing an ultrasound examination on the post partum patient.
8. Assess the fetus for signs of chromosomal abnormalities and evaluate the amniotic fluid volumes during every obstetric examination and/or follow-up examination.
9. Document possible reasons for infertility and any sonographic applications that are used in the treatment of infertility.
10. Demonstrate cultural competence by applying awareness of racial, ethnic, and cultural diversity to patient-centered sonographic care, including respectful communication, ethical decision-making, and adaptation of scanning practices to meet individual patient needs.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
Students will distinguish the expected findings of a dermoid/teratoma on an ultrasound exam image.
Students will identify leiomyomas in the uterus and label them according to the location in the myometrium: Intermural, sub-serosal, submucosal, and pedunculated.
Students will recognize all forms of placenta previa as seen on an obstetrical exam.
Students will differentiate between a molar gestation versus an anembryonic gestation.
Students will evaluate the correct cross-section level to measure BPD, HC, AC, and FL biometry on an obstetric sonogram.
Students will identify the normal fetal heart ultrasound views of: 4 chamber, Left Ventricular Outflow Tract, and Right Ventricular Outflow Tract.
Students will recognize and define a omphalocele anomaly as seen on an obstetric ultrasound examination.
Students will apply cultural awareness to patient care by communicating respectfully, making ethical decisions, and adjusting clinical practices to meet diverse patient needs.

Content

Course Lecture Content

I. Uterine Pathology

- A. Sonographic Appearance
- B. Lab Values
- C. Clinical History
- D. Pathologies
 - 1. Leiomyoma
 - 2. Adenomyosis
 - 3. Cysts
 - 4. Polyps
 - 5. Carcinoma
 - 6. Pelvic Inflammatory Disease
 - 7. Pelvic Masses / Adnexal Abnormalities
 - 8. Endometrioma
 - 9. Tumors

II. Ovarian Pathology

- A. Stages
- B. Lab Values
- C. Clinical History
- D. Sonographic Appearance

III. Infertility

- A. Causes
- B. Sonographic Applications

IV. First Trimester Complications

- A. Sonographic Appearance
- B. Lab Values
- C. Clinical Indications
- D. Conditions
 - 1. Complete Abortion
 - 2. Incomplete Abortion
 - 3. Missed Abortion
 - 4. Threatened Abortion

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- 5. Inevitable Abortion
 - 6. Blighted Ovum
 - 7. Gestational Trophoblastic Disease
 - a. Hydatidiform Mole
 - b. Choriocarcinoma
 - 8. Ectopic Pregnancy
 - a. Sonographic Appearance and Analysis
 - b. Typical Pelvic Locations
 - V. Fetal Evaluation and Pathology
 - A. Sonographic Appearance
 - B. Lab Values
 - C. Clinical History
 - D. Structures Assessed
 - 1. Placenta (location, proximity to cervix, grade)
 - 2. Brain
 - 3. Spine
 - 4. Face
 - 5. Chest
 - 6. Heart
 - 7. Lungs
 - 8. Diaphragm
 - 9. Abdomen
 - 10. GI Tract
 - 11. Kidneys and Bladder
 - 12. Gallbladder
 - 13. Liver
 - 14. Umbilical Cord (insertion and vessels)
 - 15. Limbs
 - 16. Pelvis
 - VI. Chromosomal Abnormalities
 - A. Trisomy 13
 - B. Trisomy 18
 - C. Trisomy 21
 - D. Turner's Syndrome
 - VII. Postpartum Complications
 - A. Hemorrhage
 - B. Infections
 - C. Thrombosis
 - D. Virchow's Triad
 - VIII. Maternal Disease
 - A. Diabetes
 - B. Preeclampsia
 - C. Hypoglycemia
 - D. Vascular Disease
 - E. Infections
 - F. Hypertension
 - IX. Ultrasound Evaluation of Amniotic Fluid
 - A. Lab Values
 - B. Amniotic Fluid Index

- C. Oligohydramnios
 - D. Polyhydramnios
 - E. Amniotic Band
 - F. Amniotic Sheets
- X. Cultural Competence in Gynecologic and Obstetric Sonography
- A. Respect for cultural and religious beliefs in reproductive health, pregnancy loss, and fertility care
 - B. Culturally sensitive communication during sonographic evaluation of uterine, ovarian, and fetal pathology
 - C. Awareness of health disparities in maternal disease, infertility, and fetal outcomes
 - D. Ethical considerations in diverse patient populations, including consent, privacy, and emotional support
 - E. Integration of cultural competence into clinical history gathering, patient education, and ultrasound reporting

Methods of Instruction

Method

Film/video Viewing and Discussion

Integration

Educational videos demonstrating sonographic appearances of pathology that the student may not be exposed to in the clinical setting will be used to teach students proper identification on unusual pathological findings.

Method

Lecture

Integration

Core content is delivered through instructor-led lectures enhanced by ultrasound images, anatomical diagrams, and clinical case study. Power point presentations will be used by the instructor to present the clinical indications, lab values, and pathology process of the female reproductive system and fetus.

Method

Individual Projects

Integration

Students engage in visual note-taking to reinforce understanding of complex pathologies. This method encourages retention through personalized "lightbulb" moments and creative synthesis. Sketch noting video is assigned to support this technique.

Method

Discussion

Integration

Weekly peer-sharing of sketchbook insights fosters community learning and encourages articulation of clinical concepts in small groups.

Method

Online Activity/Discussion

Integration

Weekly learning diary posts allow students to reflect on lecture, lab, and clinical experiences, promoting metacognition and peer engagement.



Method

Individual Projects

Integration

Students synthesize a key concept into a visual teaching tool for classroom display, reinforcing their understanding and contributing to peer learning.

Method

Homework

Integration

The instructor will proctor weekly in-class quizzes with multiple choice questions from homework and image-based questions to develop pattern recognition and diagnostic reasoning aligned with sonographic practice.

Method

Online Activity/Discussion

Integration

The video "The health care challenges pregnant women of color face in rural areas" will be posted in the LMS discussion board. Students will be given the prompt: View the video on maternal disparities: "The health care challenges pregnant women of color face in rural areas." Note and comment on some important facts about disparities such as rural areas, ethnic bias, drug use, access to maternal pre and post-partum care, and transportation difficulties. <https://www.youtube.com/watch?v=V5NG5UHNMuc>

Methods of Evaluation**Method**

Exams/Tests

Integration

Midterm and Final will be used to assess ability to retain and process information on Female pelvic and obstetric pathologies as seen by ultrasound. Midterm exam and Final exam- consist of 140 multiple choice questions from homework questions covering each chapter. In addition, 10 ultrasound images with patient history and/or symptoms that require critical thinking skills to determine the most likely diagnosis.

Method

Class Work

Integration

Webinar/on line lecture assignments that support the learning objectives will be required through the use of the SDMS webinar, or Sonoworld website lecture series. Student will sketch note some concepts they find important. These entries count towards points in their sketchbook.

Method

Quizzes

Integration

Quizzes will be used to monitor and evaluate the student's immediate understanding of concepts in pelvic and obstetric pathology as seen by ultrasound. Most quizzes are worth 25 points and consist of key terms, multiple choice from homework questions, and diagrams or ultrasound images.



Method

Class Work

Integration

Completion of 16 sketchbook entries; creativity; relevance to lecture topics; participation in group sharing. Scored on the number of completed entries with applicable content.

Method

Homework

Integration

The instructor will read and reply to 15 weekly posts + 1 summary in the CMS discussion "learning diary"; Replies to each student should be made each week. Students receive points for their own post and a reply to a classmate each week. Posts do not have any required length.

Method

Projects

Integration

Poster Project is assigned at the beginning of the semester. Students should look for topics that show concept clarity; visual impact; originality; alignment with sonographic anatomy or pathologies. Students receive points on completion of the poster.

Method

Homework

Integration

The instructor will view the student comments in the CMS discussion on maternal disparities: "The health care challenges pregnant women of color face in rural areas." Students will receive points based on their comments that support understanding on important facts about disparities such as limited maternal services in rural areas, ethnic bias in healthcare, drug use by pregnant mothers, access to maternal pre and post-partum care, and transportation difficulties to get to appointments and emergency care. Comments on the midwife birthing sanctuary would also show interest in finding a solution.

Assignments**Assignment Type**

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Sketchbook Assignment

Week 6 Instructions:

After this week's lecture, take a few minutes to capture one "lightbulb moment" in your sketchbook. This can be something that helped a concept click or deepened your understanding. You can write a brief note, draw a diagram, or create a digital sketch that reflects what stood out to you (i.e. a visual of fetal circulation, a chart comparing chromosomal abnormalities, or a note about interpreting maternal symptoms). Don't worry about artistic skill, this is for your learning.

At the start of next week's class, you'll meet in a small group (2–4 students) to share what you feel comfortable discussing from your sketch. You'll complete one sketch per week, totaling 16 by the end of the semester. If you haven't already, please watch the sketch noting video before our second class: [Sketch noting](<https://www.youtube.com/watch?v=pZgMpjjgCRA&feature=youtu.be>).

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

By Sunday night, post one Learning Diary entry in the CMS discussion board reflecting on something specific you learned during week 4 on female pelvis pathophysiology: from lecture, lab, or clinical training. Your post can highlight a concept, skill, or case that stood out to you. For example, you might describe how you identified a fetal anomaly on ultrasound, interpreted lab values in relation to gynecologic pathology, or improved your scanning technique during lab. No minimum word count is required, but your post should clearly show what you learned and why it matters. Before Monday's class, reply to at least one classmate's post with a thoughtful comment, encouragement, or a brief story that connects to their experience. This weekly activity helps reinforce learning and builds community. You'll complete 15 weekly posts plus one final summary post to earn full credit

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Create a Poster project (One concept only)- Use a poster board cut in half or a quarter. The idea is to use a single "lightbulb moment", such as an acronym, catchy phrase, or diagram, from your study of pathophysiology in ultrasound. This will be drawn onto the poster board using your style of creative diagrams, markers, paint, chalk, or additions such as construction paper or glitter. These posters will be displayed in the classroom for your class and for future classes to learn from. Refer to your sketchbook for ideas. Example acronym: S>L>K = Silly little kid, drawn onto a poster board using color or other characters. This helps you and other students to recall information that the spleen is more echogenic than the liver and the liver is more echogenic than the kidney.

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

This in-class quiz will include three components: matching 10 key OB/GYN terms from Chapter 3 to their definitions (e.g., fibroid, adenomyosis, myometrium), labeling a sagittal uterine diagram with anatomical structures, and interpreting one ultrasound image paired with a brief patient history to formulate a diagnosis. Students must justify their diagnosis using two sonographic features and one clinical correlation. Preparation includes reviewing Chapter 3, completing the CMS practice quiz, and studying uterine anatomy and fibroid classifications



Assignment Type

Other

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

The midterm exam will include 140 multiple-choice questions based on homework quizzes from each chapter, along with 10 ultrasound cases featuring patient history and/or symptoms. For each image, you'll apply critical thinking to identify the most likely diagnosis using sonographic features and clinical context. Be sure to review all CMS practice quizzes, chapter materials, and image interpretation strategies to prepare for this exam.

Assignment Type

Other

In-class and/or outside of class

In-class

Formative or Summative

Summative

Assignment

Your final exam will include 140 multiple-choice questions based on homework quizzes from each chapter, plus 10 ultrasound cases with patient history and/or symptoms. For each image, you'll use your clinical reasoning skills to determine the most likely diagnosis by analyzing sonographic features and correlating them with the patient's presentation. Be sure to review all chapters, CMS practice quizzes, and image interpretation strategies to prepare for this exam.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

View the video on maternal disparities: "The health care challenges pregnant women of color face in rural areas." Note some important facts about disparities such as rural areas, ethnic bias, drug use, access to maternal pre and post-partum care, and transportation difficulties. <https://www.youtube.com/watch?v=V5NG5UHNmuc>

Write your thoughts in one to two paragraphs in the CMS discussion board. Include facts and ideas of how the disparity can be minimized.

Course Materials**Textbooks**

Hagen-Ansert, Sandra. (2022). Textbook of Diagnostic Sonography. 9th edition. Elsevier.
eBook ISBN: 9780323826495

Hardcover ISBN: 9780323826464

Hagen-Ansert, S. (2018). Workbook for Textbook of Diagnostic Sonography 8th edition Elsevier. ISBN: 9780323441834

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.

Course objectives and learning outcomes are supported through the concurrent clinical course and practice within the hospital environment. Prior foundational knowledge of patient care scenarios and case studies are also put into practice that seeks to foster knowledge, empathy, and patient advocacy in developing future healthcare professionals. Sonography students and, as future graduates, will encounter scanning patients from diverse populations.

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

The course resources are offered in multiple forms to offer diverse learning methods to students. Audio learners can utilize voice-over lectures; Visual learners can utilize power-point diagrams, textbook, lab demonstrations, and videos; Hands-on learners can utilize lab simulation and practice concepts or protocols in the campus lab.

Interactions

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

Students are required to enter a drawing or digital entry in a sketchbook each week. The students interact by sharing the entry in their sketchbook with one other student at the end of each weekly class. Students will only be sharing what they feel comfortable sharing. They are instructed to not be hesitant to write notes to themselves or worry about their artistic ability.

Students participate each week in reviewing the quiz from the prior week by sharing a quiz question (usually one they missed) with a fellow student- students do not share scores on quizzes. This creates a great interaction, especially the words "I knew that one, I don't know what I was thinking." Promotes support and teaching from fellow students as well.

Students are required to post in the online discussion called "Learning Diary" each week with a reply to at least one classmate. These discussions can be from clinical experiences, classroom course work, advise, and/or support/cheerleading for each other.

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

Instructor-to-student interaction in this face-to-face obstetric and gynecologic sonography course will be embedded through live lectures, case-based discussions, and guided image interpretation sessions. Instructors will facilitate interactive analysis of clinical scenarios, encouraging students to correlate patient history, lab values, and sonographic findings in real time. Structured feedback will be provided during scanning labs and worksheet reviews, helping students refine their understanding of pathophysiology and diagnostic criteria. Regular formative assessments and in-class Q&A will promote active engagement, while instructors support clinical reasoning and reinforce patient-centered care principles throughout the curriculum.

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

Student-to-content interaction in this obstetric and gynecologic sonography course will be driven by active engagement with clinical case studies, hands-on scanning labs, and structured image interpretation exercises. Students will explore pathophysiologic conditions by analyzing sonographic images alongside clinical histories and lab data, reinforcing diagnostic reasoning. Interactive worksheets, fetal biometry charts, and pathology comparison tables will support content mastery, while guided correlation with MRA, CT, and other imaging modalities will deepen understanding of multimodal diagnostics. In-class activities and CMS resources will prompt students to apply theoretical knowledge to real-world scenarios, fostering meaningful, applied learning.

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

Student-to-self (metacognitive) interaction in this obstetric and gynecologic sonography course will be encouraged through reflective journaling, self-assessment checklists, and guided debriefs following scanning labs and case study reviews. Students will regularly evaluate their diagnostic reasoning, identify knowledge gaps, and set personal learning goals based on their performance and understanding of complex pathophysiologic conditions. Instructors will prompt students to articulate their clinical decision-making processes and reflect on how they integrate patient history, lab data, and sonographic findings, fostering deeper awareness of their cognitive strategies and promoting lifelong learning habits essential to patient-centered care.

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