Bergen Community College
Division of Health Professions
Department of Diagnostic Medical Sonography

# DMS-213 Abdominal Sonography II

**Course Information**
Semester and Year:
Course and Section Number:
Meeting Times and Locations:
Instructor:
Office Location:
Phone:
Departmental Secretary:
Office Hours:
Email Address:

**Course Description**
Abdominal Sonography II is a continuance of Abdominal Sonography I in studying abdominal structures where an emphasis is placed on specialty organ examinations. Knowledge of the diagnosis, history, and physical findings as they pertain to the pathophysiology of abdominal and small parts organs is presented. Normal and abnormal tissue patterns are included within this course. Students will practice and master a full abdominal procedure in the lab to prepare them for Ultrasound Clinic II Abdomen rotation.

3 Credits
2 Lecture Hours
3 Lab Hours

**Prerequisite(s):** BIO-109; DMS-102; DMS-113; DMS-115
**Corequisite(s):** DMS-201; DMS-204; DMS-205; DMS-218

**Student Learning Outcomes:** As a result of meeting the requirements in this course, students will be able to:
1. Identify normal and abnormal anatomy.
2. Describe medical ethics and professional behavior in a clinical setting.
3. Evaluate the appearance of congenital abnormalities and pathologies, comparing results of laboratory and diagnostic tests to help establish a diagnosis.
4. Create high quality diagnostic scans of complete abdominal, thyroid, and scrotum (phantom).

**Means of Assessment:** Students will be assessed in the following methods:
Quizzes, midterm and final exams, lab worksheets, and scanning protocol: complete abdominal ultrasound

**Course Content**
Abdominal Sonography II is a comprehensive study of abdominal structures with emphasis on examinations of the pancreas, urinary system, adrenal glands, retroperitoneum, scrotum, prostate, thyroid and parathyroid glands. Knowledge of the diagnosis, history, and physical findings as they pertain to the pathophysiology of abdominal organs and systems is presented. Normal and abnormal tissue patterns are discussed, including those of the thorax and non-cardiac chest, abdominal wall, superficial and muscular structures. Students will practice scanning in the lab in preparation for objectives required in Ultrasound Clinic II.

**Course Texts and/or Other Study Materials**
Hagen-Ansert, Sandra *Textbook of Diagnostic Ultrasound*, Mosby Co.

**Grading Policy**
The midterm and final are cumulative.

Final Grade Calculation: Final grades will be calculated as follows:

| | | | |
|---|---|---|---|
| Quiz average (4) | 25% | Midterm exam | 25% |
| Lab Protocol | 25% | Final exam | 25% |

Grade Scale: All grades are absolute and will NOT be rounded off.

| | | | |
|---|---|---|---|
| **A** | 92% – 100% | **C+** | 79% – 82.9% |
| **B+** | 88% – 91.9% | **C** | 75% – 78.9% |
| **B** | 83% – 87.9% | **F** | 0% – 74.9% |

**Academic Integrity Policy and Attendance Policy**
*Academic Integrity*
Academic dishonesty is a serious violation of BCC policy and personal ethics and will be treated as such if the reason for suspicion should arise. Students should be careful to avoid plagiarism, falsification, and compliance. Academic integrity is vital to an academic community and for fair evaluation of student assessments. All assessments submitted must be your own, completed in accordance with the college's academic policies and the student code of conduct. You may not engage in unauthorized collaboration or make use of any artificial intelligence (AI) composition systems. Academic dishonesty also includes cheating on examinations. Refer to the BCC student code of conduct, student handbook for additional information, and the statement on plagiarism (https://catalog.bergen.edu/content.php?catoid=4&navoid=163#academic-dishonesty).

*BCC Attendance Policy*
All students are expected to attend and be punctual for every scheduled meeting of each course in which the student is registered. Attendance and lateness policies and sanctions are to be determined by the director for each section of each course. These are in writing in the Policy and Procedure Student Handbook and in each course outline.

**Other College, Divisional, and/or Departmental Policy Statements**
**Accommodations for Disabilities**
Bergen community college aims to create inclusive learning environments where all students have maximum opportunities for success. Any student who feels he or she may need an accommodation based on a disability should contact the Office of Special Services.
Americans with Disabilities Act: Students who require accommodations by the Americans with Disabilities Act [ADA] can request support services from "The Office of Specialized Services of Bergen Community College] 201-612-5270/5269 or via email at ossinfo@bergen.edu.

**Mental Health and Well Being**
Mental Health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. Bergen Community College has licensed personal counselors available to assist you with addressing these and other concerns you may be experiencing.

You can learn about the confidential mental health services available on campus via the Health and Wellness Center at www.bergen.edu/personal counseling.

**Student and Facility Support Services**
**Available Online and On-Campus Resources**

Library- https://bergen.edu/library/
Academic support https://bergen.edu/academics/pathway-scholars-program/academic-support

The Writing center and Tutoring Center- L-125 https//Bergen.edu/tutoring/writing center/
OWL(Online Writing Lab) http//www.owl.english.perdue

Free Time Computer Labs https//Bergen.edu/technology assistance/computer lab availability/

The Center for student A-118 (Academic, Career, International, and Transfer Counselors)
https://bergen.educenter-for-student-success/

Personal counseling HS-100 https://bergen.edu/health-wellness-and-personal-counseling/personalcounseling/

**Sample Course Outline**

| Week | Topic/Activity | Events |
|---|---|---|
| 1 | **Lecture 1:** Upon completion of this lecture, the student will be able to:<br>1. Recognize normal anatomy and physiology of the urinary system.<br>2. Identify the branches of renal vascular supply.<br>3. Discuss the lab tests for renal disease.<br>4. Discuss sonographic evaluation of urinary system.<br>5. Identify renal variants and Anomalies.<br><br>**Lab:** Demonstrate scanning the right kidney in the longitudinal plane with the longest measurement. Demonstrate scanning three images for the right kidney in the lateral, mid, and medial planes. Demonstrate scanning three images in the transverse plane, upper, mid (with the width measurement) and lower pole of the right kidney. | |
| 2 | **Lecture 2**: Upon completion of this lecture, the student will be able to:<br>1. Explain the pathology of the renal system.<br>2. Discuss the sonographic evaluation of a renal mass.<br>3. Understand renal cystic disease.<br>4. Discuss renal neoplasms and malignancy.<br>5. Discuss benign renal tumors and their sonographic appearance.<br><br>**Lab:** Demonstrate scanning the spleen in the longitudinal plane with the longest measurements. Demonstrate scanning the spleen in the transverse plane with the widest measurements. | |
| 3 | **Lecture 3**: Upon completion of this lecture, the student will be able to:<br>1. Understand renal disease and its sonographic appearances.<br>2. Distinguish the sonographic differences between acute and chronic renal failure.<br>3. Discuss the causes, grading and the sonographic appearance of hydronephrosis.<br>4. Explain the pitfalls for evaluating hydronephrosis.<br><br>**Lab:** Demonstrate scanning the left kidney in the longitudinal plane with the longest measurement. Demonstrate scanning three images for the left kidney in the lateral, mid, and medial planes. Demonstrate scanning three images in the transverse plane, upper, mid (with the width measurement) and lower pole of the left kidney. | |
| 4 | **Lecture 4:** Upon completion of this lecture, the student will be able to:<br>1. Understand the causes and sonographic appearance of renal infections. | |

| | | |
|---|---|---|
| | 2. Discuss renal artery stenosis, renal vein thrombosis.<br>3. Identify functional normal transplanted kidney.<br>4. Identify bladder diverticulum and its sonographic appearance.<br>5. Recognize the sonographic appearance of bladder tumors.<br><br>**Lab:** Demonstrate scanning the spleen in the longitudinal and transverse plane with interface of the upper pole of left kidney. | |
| 5 | **Lecture 5**: Upon completion of this lecture, the student will be able to recognize:<br>1. The normal anatomy and physiology of the Pancreas.<br>2. Blood supply and vascular landmarks of the Pancreas.<br>3. The function of Pancreas as an exocrine, endocrine gland.<br>4. The sonographic evaluation of the pancreas.<br><br>**Lab:** Demonstrate scanning the left lobe of liver in the longitudinal and transverse planes. Demonstrate scanning four images of the longitudinal and transverse liver. Learn how to measure the Liver, the proximal, mid, distal abdominal aorta in the longitudinal and transverse planes. | |
| 6 | **Lecture 6:** Upon completion of this lecture, the student will be able to recognize:<br>1. The neoplasms of the pancreas.<br>2. Understand acute and chronic pancreatitis.<br>3. The complications of acute and chronic pancreatitis.<br>4. Sonographic findings of an abnormal pancreas and pancreatic neoplasms.<br><br>**Lab:** Demonstrate scanning the pancreas in a transverse plane. The student will take three images of the pancreas, visualizing the head, body, and tail with measurements. Demonstrate scanning the gallbladder in the longitudinal and transverse plane. Demonstrate scanning the CBD, once found magnifying it, and measuring it in an AP dimension. | |
| 7 | **Mid Term Exam**<br><br>**Lab:** Demonstrate scanning the breast phantom, and obtain knowledge of breast pathology. | **Mid Term Exam** |
| 8 | **Lecture 8**: Upon completion of the lecture, the student will be able to:<br>1. Recognize normal anatomy and physiology of the adrenal glands.<br>2. Recognize the neonatal adrenal glands.<br>3. Recognize adrenal hemorrhage, adrenal neuroblastoma, pheochromocytoma and its sonographic appearances.<br><br>**Lab:** Demonstrate scanning the complete abdominal protocol. | |
| 9 | **Lecture 9**: Upon completion of this lecture, the student will be able to:<br>1. Recognize the normal anatomy of the scrotum.<br>2. Identify the spermatic cord the vas deferens and their functions.<br>3. Know the vascular supply of the scrotum.<br>4. Know the proper patient positioning and scanning protocol for the scrotum.<br>5. Evaluate acute scrotal trauma, scrotal hematoma and their sonographic appearance.<br>6. Identify ruptured testis and fractured testis.<br>7. Discuss epididymo-orchitis and its sonographic appearance.<br><br>**Lab:** Students will be introduced to scanning protocol of the scrotum. Students will learn the proper patient positioning for ultrasound examination of the scrotum practicing on a phantom. | |

| | | |
|---|---|---|
| 10 | **Lecture 10**: Upon completion of this lecture, the student will be able to:<br>1. Recognize the sonographic appearance of testicular torsion.<br>2. Recognize extratesticular masses.<br>3. Evaluate the sonographic appearance varicocele.<br>4. Recognize and discuss hydrocele, pyocele, and hematocele.<br>5. Identify benign and malignant testicular masses.<br>6. Know the anatomy and physiology of the prostate gland.<br>7. Identify benign and malignant prostate masses.<br>8. Identify penile anatomy and vasculature.<br><br>**Lab:** Demonstrate scanning the complete abdominal protocol. | |
| 11 | **Lecture 11**: Upon completion of this lecture, the student will be able to:<br>1. Identify the normal relational anatomy, physiology and lab data of the thyroid gland.<br>2. Recognize the symptoms associated hypothyroidism and hyperthyroidism.<br>3. Recognize the sonographic evaluation of the thyroid gland.<br>4. Discuss pathology of the thyroid gland.<br>5. Identify benign and malignant lesions of the thyroid gland.<br><br>**Lab:** At this time the student should practice scanning the thyroid gland in the longitudinal and transverse plane. | |
| 12 | **Lecture 12:** Upon completion of this lecture, the student will be able to:<br>1. Discuss the various diffuse thyroid disease. .<br>2. Evaluate the sonographic appearance of thyroiditis and Hashimoto's thyroiditis.<br>3. Recognize the anatomy of the parathyroid glands.<br>4. Discuss the parathyroid physiology and laboratory data.<br>5. Know the pathology of the parathyroid glands.<br>6. Identify various miscellaneous neck masses and there sonographic appearance.<br><br>**Lab:** At this time the student should practice the entire abdomen protocol in preparation for lab testing. Students are mock tested at this point. | |
| 13 | **Lecture 13:** Upon completion of this lecture, the student will be able to:<br>1. Discuss the abdominal wall, superficial and muscular structures.<br>2. Describe the sonographic appearance of abscess, urinoma, achilles tendon rupture, thorax (non-cadriac chest), baker's cyst and rectus sheath hematoma.<br>3. Identify retroperitoneal pathology (Ormond's Disease).<br><br>**Lab:** Demonstrate scanning the complete abdominal protocol. Students are mock tested. | **Lab: LAB TESTING STARTS** |
| 14 | **Lecture 14:** Upon completion of this lecture, the student will be able to:<br>1. Review and complete a thyroid gland, scrotum and an abdominal study case.<br>2. Comprehensive review in preparation for the final exam.<br><br>**Lab:** lab testing starts. | **LAB TESTING** |
| 15 | **FINAL EXAM (COMPREHENSIVE)**<br>Multiple choice. Abdomen films included<br>**Lab:** lab testing. | **FINAL EXAM (COMPREHENSIVE)** |

**Note to Students:** This Course Outline and Calendar is tentative and subject to change, depending upon the progress of the class.