

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

DMS-228 Advanced Ultrasound Practices

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

Advanced Ultrasound Practices is a course that is designed to explore ultrasound technology and specialty techniques. Key aspects of the course include the study of advanced techniques such as 3D/4D ultrasound, ultrasound-guided interventions, and pediatric exams. Students will research an advanced use of ultrasound utilizing journal articles and databases.

1 Credit

3 Lab Hours

Prerequisites: [DMS-226](#); [DMS-229](#)

Corequisites: [DMS-221](#); [DMS-227](#)

Student Learning Outcomes: As a result of meeting the requirements in this course, students will be able to:

1. Describe the sonographic appearance of anatomy seen in cranial, musculoskeletal exams, gastrointestinal, breast, and pediatric exams.
2. Explain new and specialized procedures, techniques, and equipment used in all specialties.
3. Perform abdomen, small part, and vascular exams and document sonographic findings in written form on exam worksheets.
4. Create a research-based presentation on innovative uses of ultrasound.
5. Assemble a comprehensive resume for employment upon completion of the program.

Means of Assessment: Students will be assessed in the following methods:

Laboratory worksheets, Renal Bladder Competency, Renal Artery Doppler Proficiency, GI Tract Assessment Proficiency, Mesenteric Artery Doppler Proficiency, and a research presentation which is graded by a rubric.

Course Content

Ultrasound-guided procedures, contrast-enhanced ultrasound, 3D/4D sonography, point-of-care ultrasound, and specialized equipment will be discussed. Ultrasound's role in infertility assessment and treatments, musculoskeletal, and breast ultrasound is explored. Protocols for pediatric sonography including infant spine, hips and gastrointestinal exams are presented. A research project will familiarize students with the use of journal articles and databases. Students will also assemble a resume for employment.

Course Texts and/or Other Study Materials

Hagan-Ansert, Sandra; *Textbook of Diagnostic Ultrasonography*; Volume 1; Mosby, St. Louis, Missouri.

Research Assignment Requirement

Create and deliver a presentation on an innovative use of ultrasound. Research projects should be informed by academic peer-reviewed journal articles and include an annotated bibliography of at least four sources.

Grading Policy

FINAL GRADE CALCULATION: Final grades will be calculated as follows:

Written lab assignments 30%

Research presentation 30%

GI Tract Assessment Proficiency 5%

Mesenteric Artery Doppler Proficiency 5%

Renal Artery Doppler Proficiency 10%

Renal Bladder Competency 20%

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](https://catalog.bergen.edu/content.php?catoid=4&navoid=163#academic-dishonesty), 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.edu/center-for-student-success/>

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

Sample Course Outline

Week	Topic/Activity	Assignments/Events
1	Introduction to 3D/4D Ultrasound and Research Design SCAN LAB: 3D and abdomen/carotid exams	3D/4D Worksheet
2	Introduction to Infant Spine <i>Research 101</i>	Infant Spine Worksheet
3	Neurosonography SCAN LAB: Lower Extremity Arterial	Neurosonography post-lecture worksheet Presentation topic and annotated bibliography due
4	GI Troubles: Pyloric Stenosis, Intussusception, and Appendix SCAN LAB: GI Tract Proficiency with Report	GI Troubles post-lecture worksheet GI Tract Proficiency with Report
5	Introduction to Infant Hip SCAN LAB: Renal Bladder Competency with Report	Infant Hip Worksheet Renal Bladder Competency with Report
6	Sonohysterography and Infertility SCAN LAB: Renal Artery Doppler	Sonohysterography and Infertility post-lecture worksheet
7	Breast Ultrasound/Biopsy post-procedure care and discharge care SCAN LAB: Breast Phantom / Renal Artery Doppler	Breast Worksheet Outline and references for research presentation due
8	Transplants: Sonographer's role in organ transplant SCAN LAB: Mesenteric Artery Doppler Proficiency with Report	Transplant worksheet / Mesenteric Artery Doppler Proficiency with Report
9	CEUS and Artificial Intelligence and Automation in Ultrasound SCAN LAB: Renal Artery Doppler	Contrast and Interventional Worksheet

10	Introduction to Hernias Professionalism/Professional Memberships and Education Resumes/Interviews SCAN LAB: Renal Artery Doppler	Hernia Worksheet Visual Aids for Community Health Week
11	US-Guided Procedures and POCUS SCAN LAB: POCUS and abdomen complete	US-Guided Procedure and POCUS worksheet
12	Service Learning SCAN LAB: Carotid and Thyroid	Lab Scanning
13	Introduction to Musculoskeletal Ultrasound SCAN LAB: Renal Artery Doppler Proficiency	Musculoskeletal Worksheet SCAN LAB: Renal Artery Doppler Proficiency
14	Begin Student Research Presentations	Research Presentations
15	Finish Student Research Presentations	Research Presentations

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