

Course Number and Title: VAS 213 Vascular Techniques III

Campus Location:

Wilmington

Effective Date:

2022-51

Prerequisite:

VAS 112

Co-Requisites:

none

Course Credits and Hours:

3.00 credits

3.00 lecture hours/week

1.00 lab hours/week

Course Description:

This course is a continuation of Vascular Techniques II. Emphasis is placed on the fundamental skills and principles needed to perform and evaluate abdominal aorta, inferior vena cava (IVC), liver vasculature, mesenteric arteries, and renal vasculatures.

Required Text(s):

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:

Diagnostic Medical Sonography Program Student Manual

Schedule Type:

Classroom Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Apply test validation by defining terms and solving problems. (CCC 1, 2, 5, 6; PGC CVS 3, 5; PGC DMS 2, 4)
2. Describe anatomy, and perform sonographic evaluation of acquired and congenital disease states of the abdominal aorta, iliac arteries, and inferior vena cava (IVC). (CCC 1, 2, 3, 4, 5, 6; PGC CVS 2, 3, 4, 5; PGC DMS 1, 2, 3, 4)
3. Describe anatomy, and perform sonographic evaluation of liver vasculature, including the importance and the impact of therapeutic interventional procedures. (CCC 1, 2, 3, 4, 5, 6; PGC CVS 2, 3, 4, 5; PGC DMS 1, 2, 3, 4)
4. Describe anatomy, and perform sonographic evaluation of splanchnic arteries. (CCC 1, 2, 3, 4, 5, 6; PGC CVS 2, 3, 4, 5; PGC DMS 1, 2, 3, 4)
5. Describe anatomy, and perform sonographic evaluation of renal vasculature, including the importance and impact of interventional and surgical procedures. (CCC 1, 2, 3, 4, 5, 6; PGC CVS 2, 3, 4, 5; PGC DMS 1, 2, 3, 4)
6. Describe anatomy, and explain vascular sonographic evaluation of the penis. (CCC 1, 2, 5, 6; PGC CVS 2, 3, 5; PGC DMS 1, 2, 4)
7. Discuss indications and applications of sonographic contrast agents. (CCC 1, 5, 6; PGC CVS 2, 3, 5; PGC DMS 1, 2, 4)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Apply test validation by defining terms and solving problems.
 1. Define test validation statistics terms, including *gold standard*, *true negative*, *true positive*, *false negative*, *false positive*, *specificity*, *sensitivity*, *positive predictive value*, *negative predictive value*, and *overall accuracy*.
 2. Solve for specificity, sensitivity, positive predictive value, negative predictive value, and overall accuracy from existing data.
2. Describe anatomy, and perform sonographic evaluation of acquired and congenital disease states of the abdominal aorta, iliac arteries, and inferior vena cava.
 1. Identify anatomy of the aorta, major aortic branches, iliac arteries, and inferior vena cava.
 2. Explain pathology and pathophysiology of acquired and congenital disease of the aorta, iliac arteries, and inferior vena cava.
 3. Perform basic skills in the clinical evaluation of the abdominal aorta, iliac arteries, and inferior vena cava (IVC) with competency.
3. Describe anatomy, and perform sonographic evaluation of liver vasculature, including the importance and the impact of therapeutic interventional procedures.
 1. Identify normal and abnormal anatomy of liver vasculature, including hepatic veins, portal veins, hepatic artery, and splenic vein.
 2. Explain pathology and pathophysiology of acquired and congenital disease of liver vasculature.
 3. Explain Doppler characteristics, and perform basic skills in sonographic evaluation of liver vasculature with competency.
 4. Discuss the importance and impact of liver vascular disease treatment, including therapeutic interventions and their sonographic evaluation.
4. Describe anatomy, and perform sonographic evaluation of splanchnic arteries.
 1. Define and identify splanchnic (mesenteric) arteries, including the celiac, superior mesenteric, and inferior mesenteric arteries.
 2. Explain pathology and pathophysiology of splanchnic arteries diseases.
 3. Explain Doppler characteristics, and perform sonographic evaluation of splanchnic arteries with competency.
5. Describe anatomy, and perform sonographic evaluation of renal vasculature, including the importance and impact of interventional and surgical procedures.
 1. Identify anatomy of renal vasculature, including renal arteries, renal veins, intrarenal vessels, and kidneys.
 2. Explain pathology and pathophysiology of renal vascular disorders.
 3. Explain clinical diagnostic procedures in the sonographic evaluation of renal vasculature.
 4. Discuss the importance and impact of renal interventional and surgical procedure, including renal allografts.
 5. Perform basic skills with competency in the clinical diagnostic evaluation of renal arteries, including defining renal artery to aorta ratio.
6. Describe anatomy and explain vascular sonographic evaluation of the penis.
 1. Identify basic anatomy and vasculature of the penis.
 2. Discuss the mechanisms and Doppler characteristics of normal and abnormal erectile function.
 3. Explain sonographic procedures in the evaluation of the penis, including duplex imaging and physiological test.
7. Discuss indications and applications of sonographic contrast agents.
 1. Describe different types of sonographic contrast agents.
 2. Explain the physical principle of ultrasound contrast agent.
 3. Explain the indications and applications of sonographic contrast agents.

Evaluation Criteria/Policies:

The grade will be determined using the Delaware Tech grading system:

90	-	100	=	A
80	-	89	=	B
70	-	79	=	C
0	-	69	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Final Course Grade:

Calculated using the following weighted average

Evaluation Measure	Percentage of final grade
4 Quizzes (5% each) (formative)	20 %
Midterm Exam (formative)	20 %
Final Exam (summative)	30 %
Aorta & IVC Competency (summative)	7.5 %
Liver Vasculature Competency (summative)	7.5 %
Splanchnic Arteries Competency (summative)	7.5 %
Renal Arteries Competency (summative)	7.5 %
Review Games (include materials from VAS 111, 112, and 213) (summative)	Winner has the opportunity to earn 5 bonus points toward final exam or replace one lowest quiz grade
TOTAL	100%

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):

CVS Program Graduate Competencies: (PGCs are the competencies every graduate will develop specific to his or her major)

1. Perform competently a full range of echocardiography procedures.
2. Perform competently a full range of vascular sonographic procedures.
3. Utilize professional verbal, nonverbal, and written communication skills in patient care, procedure intervention, and professional relationships.
4. Act in a professional and ethical manner and comply with professional scope of practice.
5. Integrate critical thinking and problem solving skills as expected of a healthcare professional.

DMS Program Graduate Competencies: (PGCs are the competencies every graduate will develop specific to his or her major)

1. Perform competently a full range of diagnostic medical sonographic procedures pertaining to their learning concentration.
2. Utilize professional verbal, nonverbal, and written communication skills in patient care, procedure intervention, and professional relationships.
3. Act in a professional and ethical manner and comply with professional scope of practice.
4. Integrate critical thinking and problem solving skills as expected of a healthcare professional.

Disabilities Support Statement:

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.