



Figure 1: Owens Logo.

Course Syllabus
Semester:
School of Nursing and Health Professions
Department of Sonography

<i>Course Name:</i>	Vascular Sonography
<i>Course & Section Number:</i>	DMS 103-XXX, BXX, BXX
<i>Meeting Day(s) & Time(s):</i>	Lecture: Lab BXX – Lab BXX –
<i>Credits:</i>	3
<i>Contact Hours:</i>	5 (2 lecture, 3 lab)
<i>Lecture Instructor's Name:</i>	
<i>Office Hours & Location:</i>	
<i>OCC Phone:</i>	
<i>OCC Email:**</i>	
<i>Lab Instructor's Name:</i>	
<i>Office Hours & Location:</i>	
<i>OCC Phone:</i>	
<i>OCC Email:**</i>	

****Please use only Owens email for course communications.**

Catalog description:

This course provides an introduction to the roles and responsibilities of the vascular technologist as a member of the healthcare team. Emphasizes sonographic protocols and anatomy and physiology of the arterial system. This course introduces arterial hemodynamics and physiological factors that govern blood flow essential to the assessment of the circulatory system. Also discusses correlation of pertinent patient history and includes interpersonal relationships of the imaging department and patient management skills. Emphasizes real-time scanning techniques and imaging protocols through laboratory experiences while enhancing psychomotor skills.

Prerequisite/Corequisites:

Prerequisite – MIT105

Course Materials:

Ridgway, D. Introduction to Vascular Scanning: A Guide for the Complete Beginner, 4th edition, Davies Publishing, 2014. ISBN: 9780941022835

Daigle R. Techniques in Noninvasive Vascular Diagnosis, An Encyclopedia of Vascular Testing, 5th edition, Summer Publishing, 2023. ISBN: 978-0989932967

*If a **print book, e-book, or access code** is required for class, you can access the Owens Community College e-Campus Bookstore by accessing the online link, called “Find Books” on the course schedule for each course section.*

What You Will Learn in the Course

Course Objectives:

This course will:

1. Discuss the professional practice standards of the vascular technologist and the ethical and professional issues that confront medical imagers.
2. Introduce normal anatomy and sonographic scanning protocols of arterial structures including, but not limited to, the abdomen, upper extremities, lower extremities, and cerebrovascular system.
3. Discuss applications of Doppler imaging along with hemodynamics as it pertains to normal blood flow characteristics and physiological factors that alter blood flow.
4. Correlate pertinent patient history/assessment, laboratory tests, and other imaging modalities.
5. Provide patient management and scanning experiences in the laboratory setting.

Student Learning Outcomes:

Students will:

Outcome	Where Assessed
1. Identify health care professional roles and responsibilities in health care organizations.	Lecture Tests/Quizzes, In-Class Activities, Journal Article Presentation, Homework, Lab Tests, Practicals, Lab Assignments, Lab Check-Offs
2. State characteristics of normal arterial blood flow detected noninvasively.	Lecture Tests/Quizzes, In-Class Activities, Journal Article Presentation, Homework, Image IDs, Lab Tests, Practicals, Lab Assignments, Lab Check-Offs
3. List alterations in blood flow evident in vascular testing secondary to arterial disease.	Lecture Tests/Quizzes, In-Class Activities, Journal Article Presentation, Homework, Image IDs, Lab Tests, Practicals, Lab Assignments, Lab Check-Offs
4. Recognize methods for effective patient interactions.	Lecture Tests/Quizzes, In-Class Activities, Journal Article Presentation, Homework, Lab Tests, Practicals, Lab Instructor Evaluation, Lab Assignments, Lab Check-Offs
5. Demonstrate basic skills in vascular sonographic techniques.	Practicals, Lab Instructor Evaluation, Lab Assignments, Lab Check-Offs

Technology, Lab, and File Requirements:

Microsoft Office 365

<https://www.owens.edu/office365/>

Respondus

<https://download.respondus.com/lockdown/download.php?id=139313370>

Academic Support

Disability Services Resource Center: If you have a disability or acquire one, you may be entitled to receive reasonable accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to register for accommodations, please contact the Disability Resource Center at 567-661-7007, email disability@owens.edu, visit <https://www.owens.edu/disability/>, or stop by College Hall 124.

Tutoring Services: Owens Community College offers academic tutoring and assistance in a variety of subjects including: accounting, computing, economics, mathematics, science, and writing. For more information go to: <https://www.owens.edu/successcenters/>.

Counseling Services: Counseling Services provides assistance to students experiencing personal, educational, interpersonal/relationship, family, social, or psychological difficulties. If you feel you may benefit from this service, please contact them at counselingservices@owens.edu. More information is at <https://www.owens.edu/counseling/>.

Campus and Community Connections: The Center for Campus and Community Connections (College Hall 123) is a walk-in office created to provide retention support through resource stability initiatives and community connections. Go here for more information: <https://www.owens.edu/connection/> or contact connections@owens.edu

Owens Library: The Owens Library offers two locations (Toledo and Findlay) as well as online resources. For more information visit <https://www.owens.edu/library/>.

Students can find more information on campus resources, student support, student life, and security at this [link](#).

General Information

Student Code of Conduct: All students are expected to follow Owens Community College's Student Code of Conduct, which includes academic honesty, encompassing plagiarism. See the Board Policy for more information.

Anti-Discrimination and Harassment & Title IX/Sexual Misconduct: All students, faculty, and staff are expected to follow Owens Community College's Anti-Discrimination and Harassment Policy and the College's Title IX Policy/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

Religious Accommodations: A student seeking an accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a written email notice with the specific dates for an absence, and must do so not later than fourteen (14) days after the first day of instruction. Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy*. The request for an alternative accommodation will

be kept confidential. Students with questions about a religious accommodation under Ohio's Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu. The policy may be found on the Owens website: [3358:11-2-63 Accommodation for a Student Absence for the Observance of Religious Beliefs and Practices Policy](#)

Document Collection: Throughout the semester, your instructors may ask for a variety of assignments including tests and/or quizzes for student learning of institutional general education competencies or program assessment. Please save all your class materials until the end of the semester.

Classroom Admittance: OCC classes shall only be attended by the officially registered OCC students or perspective students, instructor of record, guest lecturer, or substitute. Visitors are not permitted to be in the classroom and should not be invited to attend or participate in the class. See [FERPA](#) regulations for more information.

Use of AI Tools: This course permits you to use artificial intelligence (AI) tools, such as chatbots, text generators, paraphraser, summarizers, or solvers, to get guidance on assignments, as long as you do so in an ethical and responsible manner. Essentially, you can think of these tools as ways to help you learn but not to entirely create work for assignments like discussion board posts, essays, presentation slides, and so on. AI is more like your tutor or TA, not a replacement for your independent thinking.

This means that you must:

- Not use AI tools to replace your own thinking or analysis or to avoid engaging with the course content.
- Cite or explain any AI tools you use. Provide the name of the AI tool, the date of access, the URL of the interface, and the specific prompt or query you used to generate the output.
- Be transparent and honest about how you used the AI tool and how it contributed to your assignment. Explain what you learned from the AI tool, how you verified its accuracy and reliability, how you integrated its output with your own work, and how you acknowledged its limitations and biases.

You are accountable for any mistakes or errors made by the AI tool. Always check and edit the output before submitting your work. If you discover any inaccuracies or inconsistencies in the output after submission, notify the instructor immediately and correct them as soon as possible. Using AI tools in an unethical or irresponsible manner, such as copying or paraphrasing the output without citation or transparency, using the output as your own work without verification or integration, or using the output to misrepresent your knowledge or skills, is considered a form of academic dishonesty and will result in a zero grade for the assignment and possible disciplinary action. If you have any questions about what constitutes ethical and responsible use of AI tools, please consult with the instructor **before** submitting your work.

Student Responsibilities & Instructor Expectations

Student Responsibilities:

- You are expected to attend weekly classes and arrive on time. If you are going to be absent, please email your instructor before class begins. Afterward, review the assignment calendar to see what was missed and reach out if you have questions.

- You are expected to fully engage with the course material and consistently put forth your best effort in lecture and lab.
- If you are unable to complete an assignment on time, contact your instructor as soon as possible to discuss your options.
- Email is the preferred method of communication outside of office hours. Please include clear and specific details in your message so your instructors can respond efficiently.
- You are encouraged to ask questions or request clarification. Unless we hear otherwise, we will assume you understand the material. Each class builds on previous concepts, so staying current is important.
- Show respect for your instructors, classmates, and the learning environment.
- You are expected to follow all guidelines and procedures outlined in the Sonography Department Procedure Manual.
- For technical issues related to Blackboard, contact the Owens Help Desk.
- If you miss a class, need additional support, or want to prepare for an upcoming test, please feel welcome to make a 1:1 appointment with your instructor here. [1:1 Appt Bookings](#)

Instructor Expectations:

- The instructor will be respectful of your time and begin and end class on time. If any changes to class times occur, you will be notified by email.
- Your instructor's goal is to review and return assignments that require student corrections within three days of submission. Assignments that do not require corrections or resubmission may take longer to be fully graded. If it has been more than three days and you are waiting on feedback for an assignment you believe may need revision, please email your instructor.
- Your instructor checks their email several times a day, but also has responsibilities outside of teaching this course. They will do their best to respond to your email with 24 hours on weekdays and within 72 hours on the weekends.
- Office hours are available outside of class time to support you with any questions or concerns related to the course. Please don't hesitate to make use of this time.
- Your instructor welcomes and encourages questions.
- Teaching is a two-way process, and your instructor hopes to learn from your insights, questions, and feedback throughout the course.

How Grades are Determined and Major Assignments

Grading Procedure:

Grades will be calculated on the following scale.

93% and Above	A
85% to 92%	B
76% to 84%	C
60% to 75%	D
59% or Below	F

Students must earn a passing grade of 76% in both the lab and lecture portions the course. If the percentage earned is less than 76% for lecture or lab, the student will earn a grade of “**D or F**” for the course and be removed from the program.

Breakdown of combined Course Grade:

Lecture Portion	50%
Lab Portion	<u>50%</u>
Total:	100%

LECTURE PORTION

The final grade for the lecture portion of the course will be computed using the following weights.

Comprehensive Final	20%
Lecture Tests	10%
In-Class Activities	5%
Quizzes	5%
Journal Article Presentation	5%
<u>Homework</u>	<u>5%</u>
Total:	50%

****Please note that ½ point will be deducted from all homework, tests, and assignments for each spelling error. Using abbreviations will also result in a ½ point deduction. ****

Comprehensive Final

One comprehensive final exam will be given and will include all lecture content covered in DMS 103. It will be worth 20% of the total course grade. Any student who is tardy to the exam will receive a five (5) point deduction on the exam. The exam will still end at the scheduled time. Any student who is unable to take the exam as scheduled must notify the course instructor at least 30 minutes prior to the start of the test in order to receive full credit. If no notification is received prior to missing the test, a ten (10) point deduction will be taken from the score of the make-up test. The makeup test will be taken within three (3) days of the original test date and must be taken in the testing center.

Lecture Tests

Two written tests will be given and averaged for 10% of the total course grade. Any student who is tardy to the exam will receive a five (5) point deduction on the exam. The exam will still end at the scheduled time. Any student who is unable to take the exam as scheduled must notify the course instructor at least 30 minutes prior to the start of the test in order to receive full credit. If no notification is received prior to missing the test a five (5) point deduction will be taken from the score of the make-up test. The makeup test will be taken within three (3) days of the original test date and must be taken in the testing center.

In-Class Activities

Attending class and being an active learner will elevate student success in the course. Most weeks there will be an in-class activity to be completed and reviewed as a class. Students must submit the assignment on Blackboard by midnight on the day of class in order to receive points for in-class activities. Any student who is unable to attend class for the week must notify the course instructor at least 30 minutes prior to the start of class to be eligible for a make-up assignment. If no notification is received, then the student will forfeit the in-class participation points from the activity for the week. There will be two pop quizzes in the course and these will not be eligible for a make-up assignment. Therefore, any student who is unable to attend class on the day of a pop quiz will forfeit the points. In-class activities and pop quizzes are worth 5% of the total course grade.

Quizzes

Quizzes will be given online through Blackboard. Students must complete these prior to the due date. No late quizzes will be accepted without prior approval from the instructor. These will cover designated terminology words and previously covered material. A study list of all the words can be found on Blackboard. Make-up quizzes will not be given. Quizzes are worth 5% of the course grade.

Journal Article Presentation

Students will choose an interesting article from the Journal for Vascular Ultrasound. Students will submit a one-page typed paper about the article and give a 3-5 minute presentation to teach the class about the article. Please see Blackboard for Journal Article Presentation Guidelines and grading rubrics. No late assignments will be accepted without prior approval from the instructor. This will be worth 5% of the total course grade.

Homework

Homework will consist of assignments, webinars and discussion posts on Blackboard. All homework must be submitted through Blackboard by the due date to receive full credit. Late assignments will be accepted at half credit up to 24 hours past the due date. Beyond 24 hours after the due date, late assignments will not be accepted without prior approval from the instructor. Homework will be worth 5% of the total course grade.

LABORATORY PORTION

The final grade for the lab portion of the course will be computed using the following weights.

Image ID's	7.5%
Lab Tests	7.5%
Comprehensive Final Image ID	10%
Comprehensive Final Exam	10%
Practicals	0%
Lab Instructor Evaluation	5%
Lab Assignments	5%
<u>Lab Check-Offs</u>	<u>5%</u>
Total:	50%

****Please note that ½ point will be deducted from all homework, tests, and assignments for each spelling error. Using abbreviations will also result in a ½ point deduction. ****

Image ID's

Two Image ID exams will be given and combined will total 7.5% of the course grade. Image IDs must be passed with a 76% or higher or the student will be given a repeat Image ID with reduced total points possible. Please refer to Procedure 4.002 in the Department of Sonography Procedure Manual regarding the lab testing sequence. Any student who is unable to attend to take the exam must notify the course instructor at least 30 minutes prior to the due date in order to receive full credit. If no notification is received prior to missing the exam a five (5) point deduction will be taken from the score of the make-up test. The makeup test will be taken within five (5) days of the original test date.

Lab Exams

Two lab exams will be given and combined will be worth 7.5% of the total course grade. Lab exams must be passed with a 76% or higher or the student will be given a repeat lab exam with reduced total points possible. Please refer to Procedure 4.002 in the Department of Sonography Procedure Manual regarding the lab testing sequence. Any student who is unable to attend to take the exam must notify the course instructor at least 30 minutes prior to the due date in order to receive full credit. If no notification is received prior to missing the exam a five (5) point deduction will be taken from the score of the make-up test. The makeup test will be taken within five (5) days of the original test date.

Comprehensive Final Image ID

A comprehensive final Image ID will be given covering anatomy from all topics presented throughout DMS 103. Any student who is tardy to the exam will receive a five (5) point deduction on the exam. The exam will still end at the scheduled time. Any student who is unable to attend to take the exam must notify the course instructor at least 30 minutes prior to the class period in order to receive full credit. If no notification is received prior to missing the exam, a ten (10) point deduction will be taken from the score of the make-up test. The makeup test must be taken in the testing center within three (3) days of the original test date. The comprehensive Image ID is worth 10% of the total course grade.

Comprehensive Final Lab Exam

A comprehensive final lab exam will be given covering all topics presented in DMS 103. Any student who is tardy to the exam will receive a five (5) point deduction on the exam. The exam will still end at the scheduled time. Any student who is unable to attend to take the exam must notify the course instructor at least 30 minutes prior to the class period in order to receive full credit. If no notification is received prior to missing the exam, a ten (10) point deduction will be taken from the score of the make-up test. The makeup test will be taken in the testing center within three (3) days of the original test date. The comprehensive final lab exam is worth 10% of the total course grade.

Practicals

1st attempt practicals will be given during the student's regularly scheduled instructional lab. **The student will need to arrive 15 minutes prior to your scheduled time ready to take the practical.** A patient will be provided.

The student will have six images to acquire in 20 minutes. All practicals are comprehensive and may include information from previous protocols. The student will be given five minutes to set up the room and prepare for the practical. The 20-minute scan time will begin when the transducer is placed on the patient. If the student would like a five-minute warning, please make the evaluator aware. If the student has finished before time has expired, please consider repeating and improving on images to receive a higher grade.

The first attempt at a scanning practical must be passed with an 85%. A total of two (2) repeat practicals will be given and must be passed with a 90%. An unsuccessful 3rd practical attempt will result in the student not being allowed to proceed in the program. The student must pass all practicals by the deadline of **DATE**. If the deadline is not met, the student will not pass the course.

Refer to Procedure 4.003 of the Sonography Procedure Manual for more information regarding practicals.

Lab Instructor Evaluation

The lab instructor will complete a final evaluation on Trajecsyst assessing the student's knowledge-based skills (20%), scanning proficiency (50%), and professional conduct (30%) demonstrated throughout the course. The score on the evaluation will be worth a maximum of 100 points. This evaluation will be worth 5% of the grade.

Lab Assignments

Lab assignments will be worth 5% of the total course grade and can be found in the lab assignment folder on Blackboard. Images must be submitted through StudyCast by assigning the reading group to the instructor and updating the status to "Preliminary" for grading. In addition, students must mark the assignment as "Ready to Grade" in Blackboard. Both steps are required for the assignment to be graded. If either step is completed after the deadline, the assignment will be considered late.

Students must spend at least one week on an assignment prior to submission to the lab instructor. Therefore, one week must lapse from the introduction of a protocol in laboratory class until the

assignment submission can occur. Students should use the Self-Review Sheet found on Blackboard for guidance on choosing their best images prior to submission.

A submission without the following items counts as a first submission and will be returned to the student without grading:

- All required images
- Images in protocol sequence
- Correct and complete labeling
- Completed worksheet
 - Indications
 - Risk Factors
 - Chart with measurements/velocities
 - Findings
 - Conclusion

Once lab assignment corrections are given to a student, they will need to return to the lab to practice the skill or technique. Images that are dated prior to the instructor corrections will not be accepted for the assignment.

Lab assignments should be submitted prior to the due date, giving the instructor ample time to grade and possibly return for corrections. It should be expected that a student may need to complete corrections, therefore, it is highly recommended that you do not wait until the last minute to submit these assignments.

Students will not be permitted to take their practical until the assignment is complete and of practical image quality.

Each lab assignment will be worth 5 points (see break down below).

Completion of Assignment	3 points
Completion of Assignment by the Due Date	1 point
Completion of Assignment by 2 nd submission	1 point
Total Points Possible	5 points

Lab Check-Offs

Lab check-offs can be completed with any credentialed supervising sonographer during supervised lab, open lab (ensure instructor availability to review), or instructional lab review weeks. These are not required to be completed in order to sit for practicals or to pass the course, however any check-off that is not completed by the due date will earn a 0 in the gradebook.

Please refer to the “Lab Check-off Guidelines” on Blackboard.

The following check-offs can be earned in this course:
Lower Extremity Arterial Duplex

ABI
Carotid (one side)

Lab check-offs are worth 5% of the overall course grade. **Deadline for completion is DATE.**

Lecture Assignment Calendar

Week	Topic	Pre-Class Assignment	Due Dates	SLO
One	Syllabus Body Planes and Anatomical Terms Lower Extremity Arterial Duplex	Chapter 8	Body Divisions and Lower Arterial Assignment In-Class Activity 1 Quiz 1	1-4
Two	No Class- Labor Day			
Three	Arterial Physiologic Testing	Chapter 7 Chapter 1, Pages 1-9	Arterial Physiologic Assignment In-Class Activity 2 Quiz 2	1-4
Four	Arterial Hemodynamics Risk Factors and Mechanisms of Arterial Disease	Chapter 6	Hemodynamics Assignment In-Class Activity 3 Quiz 3	1-4
Five	Hemodynamics and Doppler Waveforms Interpretation Review		Discussion Post 1 In-Class Activity 4	1-4
Six	Test 1			1-4
Seven	Upper Extremity Arterial Duplex Scanning and Physiologic Testing	Chapter 9	Upper Extremity Assignment In-Class Activity 5 Quiz 4	1-4
Eight	Carotid	Chapter 1 Pages (4-9) Chapter 2 Chapter 3 Chapter 4	Carotid Assignment In-Class Activity 6 Quiz 5	1-4

Nine	Carotid Quality Assurance	Chapter 21	QA Assignment In-Class Activity 7 Quiz 6	1-4
Ten	Pitfalls in Carotid Duplex Scanning Review		Discussion Post 2 In-Class Activity 8	1-4
Eleven Nov 3	Test 2			1-4
Twelve	Aorta	Chapter 16	Aorta Assignment In-Class Activity 9 Quiz 7	1-4
Thirteen	Mesenteric	Chapter 18	Discussion Post 3 Mesenteric Assignment Quiz 8	1-4
Fourteen	Review		In-Class Activity 10	1-4
Fifteen	Comprehensive Final Exam			1-4
Sixteen	Journal Article Presentations		Journal Article Written Assignment In-Class Activity 11	1-4

Lab Assignment Calendar

Week	Topic	Pre-Class Assignments	Due Dates	SLO
One	Syllabus Introductory Course Review Lower Extremity Arterial	Chapter 1 Pages 3-9 Chapter 2 Pages 11-32 Chapter 4 Pages 57-71 Chapter 6 Pages 109-128 Chapter 9 Pages 251-272 Introductory Course Review Lab Lecture PowerPoint Lower Extremity Arterial Lab Lecture PowerPoint		

		Screen Orientation, Knobology, Scan Planes Practice Image ID		
Two	Lower Extremity Arterial Arterial Physiologic Testing	Chapter 16 Pages 470-479 Physiologic Handout Lower Physiologic Arterial Lab Lecture PPT Lower Extremity Arterial Practice Image ID		
Three	Arterial Physiologic Testing		Lower Arterial Duplex Lab Assignment	1-5
Four	Scanning Review		Lab Exam & Image ID Lower Arterial Physiologic Lab Assignment	1-4 1-5
Five	Practical #1			1-5
Six	Upper Extremity Arterial	Chapter 10 Pages 273-280 Pages 289-290 Upper Extremity Arterial Lab Lecture PowerPoint		
Seven	Upper Extremity Arterial Carotid	Chapter 7 Pages 129-193 Carotid Lab Lecture PowerPoint		
Eight	Carotid	Carotid & Upper Arterial Practice Image ID	Upper Extremity Arterial Duplex Lab Assignment Upper Extremity Arterial Physiologic Lab Assignment	1-5 1-5
Nine	Scanning Review		Lab Exam & Image ID Carotid Lab Assignment	1-4 1-5

Ten	Practical #2			1-5
Eleven	Aorta	Chapter 11 Pages 307-324 Pages 339-341 Aorta & Mesenteric Lab Lecture PPT		
Twelve	NO CLASS – HOLIDAY WHEN NEEDED			
Thirteen	Mesenteric	Aorta & Mesenteric Practice Image ID		
Fourteen	Scanning Review		Aorta Lab Assignment Mesenteric Lab Assignment	1-5 1-5
Fifteen	Comprehensive Final Practical			1-5
Sixteen	Comprehensive Final Lab Exam Comprehensive Final Image ID All students on campus from TIME			1-4

***Students will be required to attend the 1st year Interprofessional Education (IPE) event. The date is TBD and more details will be given at a later date. Missing this event will result in an incomplete for the course until a make-up assignment is completed and turned in to the course instructor.**

Disclaimer: The instructor reserves the right to amend this syllabus as deemed necessary and will communicate such amendment to the students in the course. Please note that while unlikely, there is a possibility courses might need to change the delivery method due to external issues like public health concerns, weather issues, etc. If this happens, the college will communicate any changes via email and/or other communication methods.