



## Sonographic Orientation and Technique

DMS 140.11

Winter 2019

**Number of Credits:** 3

**Office:** JW 228

**Days Class Meets:** Online

**Contact Phone:** 517.796.8529

**Meeting Times:** Online

**Contact Email:** mercerlindsayl@jccmi.edu

**Location:** JetNet

**Office Hours:** T by appt, W and TH 10 - 2 pm

**Instructor:** Lindsay Mercer, BS, RDCS

**Online:** <https://jetnet.jccmi.edu/>

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Students should not hesitate to contact me as needed. The best method is through the JC email. I will reply within 24-36 hours unless notice is otherwise given.

### Course Description

In this course, students learn the principles of application of ultrasound as it pertains to the echocardiographic exam. Topics of study include: windows and views, anatomy and physiology of the heart and great vessels, Doppler techniques, nomenclature of cardiac structures per ASE guidelines, LV assessment and function, as well as clinical indications for the echo. These studies are for preparation of applying correct techniques in the acquisition of sonographic cardiac images.

### Prerequisite(s)

Acceptance into the program.

### Co-requisite(s)

DMS 141, DMS 142, and DMS 196

### Course Goals

The philosophy of the Cardiac Sonography Program is unified by common goals, which include thoughtful intentional course design, role modeling, and classroom and clinical experiences that provide the student with the knowledge, skills, and attitudes of an entry-level cardiac sonographer. The educational process conveys caring for the whole person and promotes a balance of knowledge, technical skills, spiritual awareness, emotional intelligence, and physical health in performing professional services. The program has set common goals for students that include but are not limited to the following **program goals**:

- Prepare students through a comprehensive, quality curriculum to become competent entry-level cardiac sonographers.
  - Provide students with a program that meets or exceeds professional standards and guidelines of CAAHEP accreditation.
  - Prepare students for successful completion of American Registry for Diagnostic Medical Sonographers (ARDMS) credentialing exams.
  - Encourage and prepare students to be analytical thinkers.
  - Prepare students for employment as staff cardiac sonographers within current and future healthcare systems.
  - Prepare and assist students for transfer into four-year institutions and baccalaureate completion options.
  - Prepare students to be caring and effective communicators within healthcare delivery systems and among patients of normal and altered states, other healthcare team members and paraprofessionals.
  - Help students become safe, knowledgeable, caring health professionals
  - Prepare students to appropriately respond efficiently and effectively to emergency situations.
  - Encourage students to care for their patients and themselves as whole persons with physical, emotional and mental needs.
- Prepare students to be active contributing participants in professional organizations and their community.

### Course Objectives

- Demonstrate knowledge of cardiac windows and views
- Describe the events of the cardiac cycle
- Explain how Doppler has its purpose in the echocardiogram

### Textbook

- Reynolds, Terry, *The Echocardiographer's Pocket Reference*, Fourth Edition 2013, ISBN 978-0615768359, Arizona Heart Foundation.

- Otto, Catherine M. *Textbook of Clinical Echocardiography*, Sixth Edition 2018, ISBN 978-0323480482, Elsevier Saunders. [www.elsevier.com](http://www.elsevier.com)

**\*Textbook Zero!** This textbook is available in a digital format from amazon.com (Kindle). You can also check with the JC bookstore or your local library regarding possible digital formats.

- Anderson, Bonita, *Echocardiography, The Normal Examination and Echocardiography Measurements*, Third Edition 2017, ISBN 978-0992322212, MGA Graphics, Australia, [www.echotext.com](http://www.echotext.com), [www.amazon.com](http://www.amazon.com)

- Harry, Mark J. *Essentials of Echocardiography: An Illustrative Guide*. Fourth Edition 2013, ISBN: 978-0989428002, Cardiac Ultrasound Consulting. [www.cardiotextpublishing.com](http://www.cardiotextpublishing.com)

- Armstrong, Ryan, *Feigenbaum's Echocardiography*. Eighth Edition 2018, ISBN 978-1451194272, Lippincott Williams & Wilkins.

**\*Textbook Zero!** This textobook is available in a digital format from www.amazon.com E-book (Kindle) option available and through the JC Bookstore.

## Grading Procedure

**ONLINE QUIZZES, TESTS, EXAMS:** You must have a reliable internet connection to be successful in this course. If you do have Internet problems, you will need to take your assessments at the JC testing center, local library, or a college-testing center near you. Tests, quizzes and exams cannot be reset if you should lose your connection while taking your exam. The resetting of exams diminishes the integrity of the exam. If you have any questions regarding this, please speak to me ASAP.

5 quizzes total	129 pts
Vocabulary	10 pts
Vocabulary II	10 pts
Article Quizzes	65 pts
LV worksheet	15 pts
Doppler worksheet	32 pts
Harry Questions	25 pts
Code of Ethics	10 pts
Mid-Term	219 pts
Final	250 pts
Test	99 pts
Total	864 pts

## Grading Scale

GPA	GRADE RANGE
4.0	95-100%
3.5	90-94%
3.0	84-89%
2.5	80-83%

2.0	75-79%
1.5	70-74%
1.0	65-69%

## **Failure**

GRADE POLICY: STUDENT MUST RECEIVE A 2.0 OR HIGHER IN ALL CORE CURRICULUM COURSES TO REMAIN IN THE PROGRAM. STUDENTS WHO EARN BELOW A 2.0 WILL BE UNABLE TO CONTINUE FURTHER COURSEWORK AND WILL BE REMOVED FROM THEIR CLINICAL EDUCATION CENTER.

A 2.0 is a passing grade. Only courses with passing grades count toward graduation. Other colleges transfer in only courses with passing grades. Many financial aid sources, including most employers, require passing grades. Additionally, earning less than a 2.0 in a class results in not being able to participate in the next level of courses in a discipline that requires this course as a prerequisite. If you attempt to register for the next course sequence and have not passed the prerequisite course, you will be dropped from that class.

## **Academic Honesty Policy**

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

**Plagiarism is defined as the failure to give credit for the use of material from outside sources.**

**Plagiarism includes but is not limited to:**

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

**Cheating is defined as obtaining answers/material from an outside source without authorization.**

**Cheating includes, but is not limited to:**

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical

- Allowing your work to be submitted by others

## Course Management

If a student feels they are struggling or may be unable to complete the course, they must contact the instructor/program director as soon as possible to discuss options for moving forward in the program.

Grades will be changed only for incomplete grades or faculty/clerical error. The last grade earned will be used in computing a student's cumulative grade point average. All grades will remain on the student's academic records and any grade not used to compute a student's GPA will be designated. The complete credit hours will be counted only once for each degree/certificate purposes.

The DMS student must complete all course/program requirements for graduation within a maximum of two (2) years.

## Makeup Policy

No late assignments will be accepted unless prior arrangements have been made.

## Help

*Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the office of Learning Support Services at 787-0800, extension 8415 as soon as possible to ensure that such accommodations are implemented in a timely fashion.*


It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. Accommodations do not automatically carry over to the next semester.


<https://www.jccmi.edu/center-for-student-success/accommodations-for-students-with-disabilities/>



## Calendar


Reading assignments should be completed prior to each week's lesson in order to maximize learning. See JetNet for assignment instructions and due dates. Reading assignments and/or assessments may be modified to enhance student learning.

*\*\*Syllabus is subject to modification as needed throughout the course. See JetNet for assignment instructions and due dates. Reading assignments and/or assessments may be added to enhance learning.*

WEEK #	DATE	TOPIC	HOMEWORK
1	Jan 14 - 20	Intro to Echo (History) Windows and Views	<i>Otto</i> 10-13, 33-52, <i>Feig</i> 1-7, 61-82, 95-97,  View all Video Clips associated with the pages

			<p>via vitalsource, <i>Anderson</i> 33-70, <i>Reynolds</i> 321-322</p> <p>Introduce yourself on JetNet View videos</p> <p><b>Vocabulary Part I – DUE JAN 20</b></p>
2	Jan 21 -27	<p>Windows and Views-more</p> <p>Anatomy on 2D images</p> <p>Wall segment introduction</p>	<p>View videos, ppt. and all links</p> <p><b>Quiz 1 – DUE JAN 27</b></p>
3	Jan 28 – Feb 3	M-mode	<p><i>Harry</i> (M-mode images on these pages. Use accompanying images for correlation) pgs 73, 75, 76, 77, 84. <i>Otto</i> 49-53, <i>Anderson</i> 71-81, <i>Reynold's</i> 318-320, View all videos and links.</p> <p><b>Quiz 2 – DUE FEB 3</b></p>
4	Feb 4 - 10	<p>Assessment left chambers</p> <p>ASE Wall Segments</p>	<p><i>Anderson</i> 187-189, <i>Otto</i> 144-163 <i>Harry</i> 43, 90, 91, <i>Feig</i> 100-106</p> <p> View all Video Clips associated with the pages via vitalsource.</p> <p><b>LV Worksheet and Test I – DUE FEB 10</b></p>
5	Feb 11 - 17	<p>Machine knobology</p> <p>Doppler</p>	<p><i>Anderson</i> 10-18, 83-95, 97-103, 105-128, <i>Harry</i> 23-29</p> <p>Cardiac Articles &amp; Quizzes</p> <p><b>Vocabulary Part II – DUE FEB 17</b></p>
6	Feb 18 - 24	Doppler and the Doppler exam	<p><i>Anderson</i> 83 – 103</p> <p><b>Doppler Worksheet and Quiz 3 – DUE FEB 24</b></p>

7	Feb 25 – Mar 3	Color Doppler, Clinical Indications for the Echo  Patient care, Quality assurance and Clinical prep	<i>Otto</i> 61-65 (including tables), 120 – 130, 133 – 141 (including tables), <i>Anderson</i> 129 – 137, Review for Midterm, Review ASE Documents
8	Mar 4 - 10	Midterm	Midterm Exam
9	Mar 11 - 17	Winter Break	<b>Cardiac Quizzes - DUE MARCH 17</b>
10	Mar 18 - 24	Diastology-Filling and Function  Intro to Stress Echo  Code of Ethics	<i>Anderson</i> pgs. 295-315, <i>Harry</i> 219-229 (PDF link), <i>Reynold's Handbook</i> 177-188, 367-376, <i>Feigenbaum</i> 128-149  View all Video Clips associated with the pages via vitalsource, <i>Otto</i> 178-198, 200 - 202  <b>Quiz 4 – DUE MARCH 24</b>  <b>Harry Diastology Assignment 230-237 (pdf link) (assignment due following week)</b>
11	Mar 25 - 31	TEE  SDMS Code of Ethics	<i>Otto</i> 67-93, <i>Feigenbaum</i> 82-87  View all Video Clips associated with the pages via vitalsource.  <b>Harry Diastology Assignment – DUE MARCH 31</b>
12	April 1 - 7	Terms and Definitions  HIPAA	
13	April 8 -14	ECG	See PowerPoint Lesson  <b>Quiz 5 – DUE APRIL 14</b>

14	April 15 - 21	Assessment Techniques for LV Systolic Function WRMSDs and Sonography, Sonographer Responsibilities	<i>Feigenbaum 87 -94, 106-112</i>  View all Video Clips associated with the pages via vitalsource. It's Everyone's Responsibility PDF
15	April 22 - 28	Final Exam Review	Study Guide, BBB Review Session
16	April 29 –May 5	Final Exam	<b>Proctored Final Exam – Opens April 24 and closes May 3</b>

### Important Dates: Winter 2019

DATE	EVENT
JAN 14, 2019	DAY AND EVENING CLASSES BEGIN
JAN 14 – MAY 5, 2019	SEMESTER DATES
FEBRUARY 1, 2019	IN-SERVICE DAY. NO CLASSES
	PATHWAY SHOWCASES DAY. NO CLASSES
MARCH 11 – 15, 2019	WINTER BREAK. NO CLASSES
MAY 5, 2019	END OF FALL SEMESTER
MAY 7, 2019	GRADES DUE

### Student Responsibilities

To be available and ready for each session to cover the necessary topics and to demonstrate their ability to meet performance objectives. It is expected by the instructor that all assignments and readings will be completed on time prior to class so that the student may have the best opportunity to understand the lecture material and make inquiries of difficult topics. The very nature of this program makes it very difficult for one to catch up once they have gotten behind.

It is also the student's responsibility to possess a secure Internet connection for testing purposes. If the students' ISP kicks them off the Internet during a test, the student will not be allowed to take test again



and will receive a zero for that test. Students can find secure Internet connection at their local library or community college.

### **Expectations and Requirements of Students**

Courtesy toward everyone (instructor and fellow students) is expected and will be monitored and maintained at all times. Online forums are a place for learning, sharing, and communication with one another. If there is disagreement, that's fine, but we handle it with professionalism and courtesy.

### **Instructor Responsibilities**

To facilitate learning, provide and explain the necessary materials for each student to understand the assignments and develop course performance objectives to a near mastery level.

### **Attendance Policy**

In compliance with Federal Title IV funding requirements, as well as college initiatives, reporting of student participation in classes will occur at three designated times each semester. Instructors will assign one of three non-transcripted letter symbols to each student during each reporting period (see below). Students identified as no longer participating will be dropped or administratively withdrawn from the class, and students identified as needing academic assistance will be contacted.

### **Participation/Progress Symbols**

- H – The student is not doing acceptable work and needs **H**elp to be successful.
- Q – The student has not participated and the instructor believes they have unofficially withdrawn (**Q**uit). These students will be dropped/withdrawn from the class.
- V – The instructor **V**erifies that the student is participating and doing acceptable work.