



## Introduction to Cardiac Clinical

### DMS 196 all sections (on campus)

**Number of Credits:** 5

**Days Class Meets:** T, TH, F

**Meeting Times:** 8:30 am -12:03 pm or 1:00 pm – 4:33 pm

**Location/Venue:** Main Campus - HLC 218

**Instructor:** Christina Osborne RDCS, Robin Arnold RDCS, Carolyn Arnest RDCS, Sasha Powless RDCS, RVT, Jackilyn Bunnell, RDCS, Breeann Wymer, RDCS (Lindsay Mercer, BS, RDCS Lead Faculty)

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**Office Hours:** Open lab Wednesdays from 10 am – 1 pm, HLC 218. Virtual office: Monday and Thursday 12:30 pm – 3 pm or by appointment.

**The best way to contact your instruction is by email. You may also send a message in JetNet.**

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## Course Description

This course prepares cardiac sonography students for their clinical externship. Students will study and practice the technical as well as personal skills as they relate and are required for the on-site work experience. Students will demonstrate sonographic scanning of their program discipline with the expected outcome of a basic level competency.

## Prerequisite(s)

Acceptance into the CSON program.

## CSON Program Goals

**Program Overarching Goal:** To prepare competent entry-level cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains. Successful graduates will:

1. **Program Goal:** The graduate will exhibit a professional attitude and behavior appropriate to the healthcare setting (affective).

### **Student Learning Outcome:**

1. Demonstrate behaviors and attitudes that show sensitivity and acceptance of individual and cultural differences, and respecting diversity.
  2. Demonstrate effective communication skills with patients and all members of the healthcare team.
  3. Demonstrate compassionate patient care and education during sonographic procedures to promote overall well-being.
  4. Demonstrate a commitment to lifelong learning.
- 2. Program Goal: The graduate will exhibit critical thinking skills during the performance of adult echocardiographic procedures providing diagnostic quality (cognitive).**

### **Student Learning Outcome:**

1. Collect and combine, assess, and analyze cardiovascular sonographic images for the purpose of physician diagnosis.
  2. Evaluate normal and abnormal cardiovascular anatomy and recognize cardiovascular pathologic conditions.
  3. Collect, review and integrate pertinent patient data to facilitate optimum diagnostic results.
  4. Composition of complete and accurate sonographic findings to the interpreting physician to facilitate patient diagnosis.
- 3. Program Goal: The graduate will have the ability to operate cardiovascular ultrasound equipment and determine proper techniques to produce quality sonographic images (psychomotor).**

### **Student Learning Outcome:**

1. Application of ultrasound principles and instrumentation relative to imaging and image quality to produce diagnostic adult cardiac sonography examinations.
2. Demonstrate adult cardiac sonography procedures appropriately and accurately recording all anatomic and physiologic information for interpretation by a physician.
3. Demonstrate achievement of clinical competency through the performance of adult cardiac sonography by meeting or exceeding measurable clinical scanning competencies.

## **Course Objectives**

At the completion of this course, the student will have the ability to display that he/she understands and is competent to recite, perform and/or demonstrate the following:

1. General pertinent patient care

2. Asepsis, universal precautions, OSHA standards
3. Patient interviewing techniques.
4. Entry level sonographic exam protocols.
5. Sonographic and echocardiographic terminology.
6. Sonographic scanning planes, windows, and views of the cardiac exam.
7. Patient positioning for the cardiac exam.
8. Scanning motion and transducer manipulation.
9. Professional interactions: verbal, non-verbal, and in writing.
10. Knowledge of cardiac anatomy on the ultrasound exam.
11. Perform and demonstrate basic scanning techniques.
12. Demonstrate proper ergonomics during the course of the exam.

## Textbook

- Palma, Richard, *Echocardiographer's Pocket Reference*, Fifth Edition 2020, ISBN 978-0578687179, 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)
- **Digital Format:** This text is available in a digital format to rent or purchase through the JC Bookstore. Please see the links posted on your class JetNet site.
- 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)
- Dewitt, Susan K. *Echocardiography from a Sonographer's Perspective: Notebook & Workbook Package*, 7<sup>th</sup> Edition 2018, [www.echonotebook.com](http://www.echonotebook.com)

### **ADDITIONAL TEXT (NOT REQUIRED)**

- Armstrong, Ryan, *Feigenbaum's Echocardiography*. Eighth Edition 2018, ISBN 978-1451194272, Lippincott Williams & Wilkins.
- **Digital Format:** This text is available in a digital format to rent or purchase through the JC Bookstore. Please see the links posted on your class JetNet site.

Please review the cost of your required materials to determine the best option for you to purchase your materials.

Please note, your opt out selection is for your *entire* semester schedule. You cannot opt out/opt into individual courses. And you must opt out by the due date of your first class, which is the 3<sup>rd</sup> day after the start of your earliest course.

## [Learn new textbook program at JC](#)

For account billing questions, please contact the Jackson College Cashier at [jccashier@jccmi.edu](mailto:jccashier@jccmi.edu)

## Scanning Policy and Scan Release Form

In order to learn the scanning techniques to prepare for the clinical experience, we must scan student volunteers. For the optimal learning experience, all students are asked to volunteer.

All students that volunteer are required to sign a **Scan Release Form**. All non-student volunteers are required to sign the same form. The person being scanned is aware that this is in no way designed to be a diagnostic test for medical purposes. The JC Cardiac Sonography program is not responsible for any diagnostic information obtained from scanning.

You are not required to be a scan model. Grades are not affected whether you volunteer or do not volunteer. If you object to participate as a scan model, please notify your Program Director Lindsay Mercer.

## Grading Procedure

### Grading System:

4 Scanning competencies/assessments	300 points
4 Addtl Comps (BP, Ppt Tx, PPE, HW) @ 5 each	20 points
4 Quizzes @ 30 pts each	120 points
Final scanning assessment	150 points
Affective Domain Evaluation	30 points
Student Group Chat Assignment	<u>15 points</u>
	<b>635 points total</b>

## Grading Scale

<b>GPA</b>	<b>GRADE RANGE</b>
4.0	95-100%
3.5	90-94%
3.0	85-89%
2.5	80-84%
2.0	75-79%
1.5	70-74%

## 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**

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**

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

## **Accessibility**

Jackson College understands that cultivating a broadly diverse community is crucial to our educational mission and to our foundational commitment to leadership and service. Jackson College is fully committed to ensuring our courses are accessible to everyone including those with disabilities. We are currently working to increase accessibility and usability of our course materials in order to meet or exceed the requirements of Section 508 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1991 and Web Content Accessibility Guidelines (WCAG) 2.0. For more information about Jackson College's

efforts to ensure accessibility please visit the [Jackson College accessibility web page](#).

If you have an accessibility need in any of our classes please e-mail the Center for Student Success at [JCCSS@jccmi.edu](mailto:JCCSS@jccmi.edu) or visit the [Center for Student Success web page](#).

At the Center for Student Success (CSS), we are committed to providing all students the opportunity to achieve academic success by providing a variety of support services free of charge to Jackson College students. This includes, but is not limited to, peer and faculty tutoring, mental health referral, temporary assistance with transportation, various workshops/seminars, and the TRIO program.

In addition, the CSS staff is committed to adapting the College's general services to meet the individual needs of otherwise qualified students with disabilities, for the purpose of providing equal access to all programs and facilities.

### **Laboratory Skill Assessments:**

**Extended time for live demonstration skills examinations:** The purpose of skills test items incorporates the designated response time for patient safety and provider efficiency in the clinical setting. Students who are granted accommodations through the Center for Student Success (CSS) can complete any skills non-final practicum examination with up to 1.5 minutes per image acquisition (standard time is one minute per image acquisition).

## **Oasis Center**

During a student's college experience, one might encounter situations that impact their learning environment. When these situations occur, support from the Oasis Center is available to provide short-term assistance. If the situation requires ongoing support, the Oasis Center staff can provide that level of support or will assist the individual in securing an outside agency to provide it.

For more information visit the Jackson College Oasis Center webpage <https://www.jccmi.edu/the-oasis-center/>

## **Health Clinic**

Jackson College has partnered with Henry Ford Allegiance Health to offer healthcare to Jackson College students and employees. The Jackson College Health Clinic (JCHC) is located on Central Campus in the Justin Whiting Hall, Room 111. The caring and professional staff at the JCHC provides quality healthcare, including annual exams (physicals, program physicals and sports physicals), acute and chronic illness care and preventative health care (It's Your Life).

For more information visit the Jackson College Health Clinic webpage <https://www.jccmi.edu/health-clinic/>

## **Dental Clinic**

Community members may utilize Jackson College Dental Hygiene Clinic, which offers dental hygiene services while helping students gain experience. Students work under the supervision of license dental hygiene instructor and dentist as they offer preventative services.

For more information visit the Jackson College Dental Clinic webpage <https://www.jccmi.edu/dental-hygiene/dental-hygiene-dental-clinic/>

## 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.

Open lab will be scheduled throughout the duration of this class. Sign up for open lab is required in advance. Contact Lindsay Mercer at [lmercer@jccmi.edu](mailto:lmercer@jccmi.edu) for more information.

## Academic Advising

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. Please e-mail [JCCSS@jccmi.edu](mailto:JCCSS@jccmi.edu) or visit the [Accommodations for Students with Disabilities](#) web page

## 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.

## **Attendance- Participation Policy**

**ATTENDANCE IN THIS COURSE IS MANDATORY. ABSENCE(S) CAN AFFECT YOUR ABILITY TO ATTEND THE CLINICAL ROTATION.**

Your success in this course relies heavily on your attendance. It is not possible to advance and excel in the scanning skills needed prior to beginning your clinical experience if you are not here on a consistent basis.

One absence will not affect your grade. Subsequent absences will result in a deduction of 10 points each. **Three or more absences will result in a warning process that may also apply to DMS 142, Clinical I.**

Tardiness is a disruption to the instructor as well as to your classmates. Please be on time to class. If the weather looks like it may delay you in getting to class, give yourself a little more time for your trip. Please be mindful of this and make every attempt to show up on time. Tardiness will affect your grade on the 'affective domain' assessment. Excessive tardiness (more than 2) will result in a warning process that may also apply to DMS 142, Clinical I.

Regular class participation and keeping up on the reading and assignments is strongly correlated with survival in college. It is my recommendation that you plan to do your assignments and take your exams BEFORE the last day they are due. If problems occur, there is time to fix them before the deadline.

In compliance with Federal Title IV funding requirements, as well as college initiatives, I will be monitoring student participation on a regular basis and officially reporting student activity throughout the term to assure compliance with college policy and federal regulations. It is imperative that you log in to the course and actively participate within the first couple of days of the term to validate your enrollment in the course. After that, not actively participating in class may result in you being withdrawn from the course. Being withdrawn from a course can have an impact on financial aid, billing, athletic eligibility, and housing status. As a college student you are responsible for how your participation impacts your academic progress; the accountability lies with you.

## **Caveat**

Please note: The format and timing of this course may need to change due to unforeseen circumstances. In particular: school closings, instructor illness, weather, or other situations that may arise.

**All COVID safety protocols in place are based on current guidelines and will be enforced while students are on campus.**

## **Expectations and Student Requirements**

- Show up to class on time and be prepared by reviewing materials provided.
- Have reading assignments completed by date posted.



- Be a scanner and a scannee. (Please refer to the Student Scanning Policy in the Cardiac Sonography Handbook)
- Protect your classmates' modesty, display professionalism
- Keep your equipment and working space clean and in order
- Share the probe!
- Adhere to lab rules
- Be responsible for your learning
- Help others with your knowledge and skills
- Students are expected to participate and be prepared for each session. Student grades and evaluations will not be affected by participation or non-participation as a scan model.
- It is presumed by the facilitator that assignments, including reading and viewing of all videos, will be completed on time and prior to class. Studying the material on assigned topics prior to being presented in class allows the student the best learning opportunities and to be prepared to pose questions in areas requiring clarity. The pace of this course makes it very difficult for a student to catch up once that student falls behind.
- It is highly suggested by the instructor that students utilize as many references as possible to enhance their learning.
- Courtesy toward everyone (instructor and fellow students) is expected and will be monitored and maintained at all times. If applicable, 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.

<https://www.jccmi.edu/student-life/student-conduct/>

## Cell Phone Policy

Cell phones are to be kept out of site. You may check your cell phone while on scheduled breaks.

## Calendar

Topics of instruction and practice. For success on quizzes and competencies in DMS 196, students are expected to apply information gained in accompanying courses DMS 140 and DMS 141.

***\*Syllabus subject to minor adjustments and changes with adequate notification to students.***

WEEK #	DATE	TOPIC	HOMEWORK
1	Jan 11	Introductions, Intro to machines, Lab Policies, Scan PLAX, Affective Domain	Read Cardiac Clinical Manual, Videos, images, documents, links, Ergonomics PPT

	Jan 13	Ergonomics PLAX, Ao, MV,	Videos, images, documents, links
	Jan 14	PLAX, AO, MV, PSAX	Videos, images, documents, links
2	Jan 18	PSAX, RVIT, RVOT	ASE Video, other videos, images, documents, links
	Jan 20	PSAX, RVIT, RVOT	
	Jan 21	All parasternal views, 2D Put it all together	<b>Quiz 1 All parasternal views, anatomy DUE Sunday, Jan 23<sup>rd</sup></b>  <b>Competency 1</b>
3	Jan 25	Apical 4, 5, 3, 2	Videos, images, documents, links  <b>Competency 1 DUE</b>
	Jan 27	Apical 4, 5, 3, 2	Videos, images, documents, links
	Jan 28	Apical 4, 5, 3, 2	Videos, images, documents, links
4	Feb 1	Apical 4, 5, 3, 2, Subcostal	
	Feb 3	Subcostal, SSN	Videos, Diagrams
	Feb 4	Subcostal, SSN, Wall Segmentation	<b>Competency 2</b>
5	Feb 8	PLAX M-Mode and 2D measurements	Videos, Diagrams, PPT, Documents  <b>Quiz 2 Apicals, SSN, Subs – DUE Sunday, Feb 13<sup>th</sup></b>  <b>Competency 2 DUE</b>
	Feb 10	PLAX M-Mode and 2D measurements	

	Feb 11	PLAX M-Mode and 2D measurements	Videos, Images, Documents, links
6	Feb 15	Spectral and color Doppler PLAX, Blood Flow	Videos, Images, Documents, links
	Feb 17	Spectral and color Doppler PSAX, Apical 4	Videos, Images, Documents, links
	Feb 18	Spectral and color Doppler Apical 4	<b>Competency 3</b>
7	Feb 22	Spectral and color Doppler Apical 4, 5, 3, 2	<b>Competency 3 DUE</b>
	Feb 24	Spectral and color Doppler 4, 5, 3, 2, Aortic Stenosis	Videos, Images, Documents, links
	Feb 25	Spectral and color Doppler 4, 5, 3, 2, Aortic Stenosis	<b>Quiz 3 Measurements – Due Sunday, Feb 27<sup>th</sup></b>
8	Mar 1	Pedoff probe	<b>Competency 4</b>
	Mar 3	Put it all together	<b>Competency 4 DUE</b>
	Mar 4	Record blood pressure, patient care, patient history  Simulation Lab	<b>COMPS – Handwashing, BP, PPE, Patient Transfer DUE</b>
9	Mar 7 - 11	Mid-Semester Break, No Class	
10	Mar 15	Putting it all together	
	Mar 17	Final Competency	<b>Final Competency 5 &amp; Affective Domain Evaluation</b>
	Mar 18	Final Competency	<b>Quiz 4 Doppler – Due Friday, March 18<sup>th</sup></b>  <b>Student Group Chat Assignment – Due Friday, March 18<sup>th</sup></b>  <b>Final Competency 5 &amp; Affective Domain Evaluation</b>

## Important Dates:

<b>MONDAY 01/17/2022</b>	<b>MARTIN LUTHER KING JR. DAY – NO CLASSES</b>
<b>MONDAY 3/7 -SUNDAY 3/13/2022</b>	<b>MID-SEMESTER BREAK – NO CLASSES</b>
<b>FRIDAY 3/18/2022</b>	<b>LAST DAY OF COURSE</b>