

Jackson College  
DMS 244 Echo Clinical III  
Online Delivery/Clinical Site  
Fall 2016

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**Office Hours:**

Mondays 11-4 pm  
Tuesdays 10-3 pm

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

**COURSE DESCRIPTION:** Students receive 464 hours of supervised clinical experience in an echo lab at an approved medical facility. This course provides hands-on experience at an advanced level of cardiac imaging and use of cardiovascular equations. Interpretation skills will apply. Successful completion of scanning proficiencies is required to graduate from the program. This clinical course is the final course in a sequence of three, and the final objective to be met is successful, independent performance and evaluation of the complete adult echocardiogram.

**ADDITIONAL INFORMATION:** Within their clinical site, students will continue to learn and practice department policies and procedures. Students will also continue to learn by observance, practice and dialogue carried out by the echocardiographer and the cardiologist/physician. Students will continue to learn and master their scanning skills by a more independent performance of the exam. Use of critical thinking and analyzing skills to assess the outcome using pertinent patient history and visual examination of the echo will be necessary. The achievement of reaching the capabilities of the entry-level cardiac sonographer is the student's main goal. Note: Clinical hours total may vary.

**The critical thinking component will be assessed to a high level in this clinical course. An ability to scan and obtain images is not enough to pass this course. The ability to assess, investigate, analyze, and anticipate the direction of the exam will determine success in this course. It is possible to find out at this point (this semester) of the program that the critical thinking component will hinder successful completion of the program.**

Formulas, calculations and pathologic conditions learned in DMS 240 will apply to this advanced level of scanning in this semester. At this level, the student will begin to feel confident at scanning the normal and abnormal echocardiogram in its entirety, with minimal to no assistance.

During this semester, the student will receive greater exposure to the stress echo and the transesophageal echocardiogram.

**PRE-REQUISITES:** Pre-requisites for this course are DMS 142 and DMS 148.

**TEXTS REQUIRED:**

- Reynolds, Terry, *The Echocardiographer's Pocket Reference* Fourth Edition, Arizona Heart Institute, Ph. 800.835.2920.
- Otto, Catherine M. *Textbook of Clinical Echocardiography*, Fifth Edition, W.B. Saunders Company 2013.
- Anderson, Bonita, *Echocardiography The Normal Examination and Echocardiography Measurements*, Second Edition.
- Harry, Mark J. *Cardiac Doppler Hemodynamic Workbook*.
- Feigenbaum, Armstrong, Ryan, *Feigenbaum's Echocardiography*, Seventh Edition.

**CLINICAL ATTIRE:** All students are required to dress in proper attire at their respective clinical site. This includes dress casual attire and a white lab coat with name badge. Comfortable shoes recommended. If required by the clinical site, scrubs must be purchased at the student's expense. See Clinical Manual for more information.

**COURSE OBJECTIVES**

**During weeks 1-8 of this course, student should be able to:**

- Continue to practice and perfect objectives assigned to them in DMS 142 Clinical I, and DMS 148 Clinical II.
- Scan all TTE's with minimal assistance.
- Recognize and label abnormal patterns of the ECG
- Continue to recognize and acquire the routine imaging planes and anatomy for the complete echo. This will include all types of patients, including the 'difficult to scan' patient.
- Explain the abnormal appearances of the M-mode
- Analyze reasons for differences in the M-mode exam vs the 2D exam
- Evaluate and explain cardiac hemodynamic information using Color Doppler
- Explain procedure for evaluation of diastolic dysfunction
- Recognize abnormal cardiac appearance and pathology: right and left chamber enlargement, LVH, cardiomyopathies, tumors or masses, ASD, VSD.
- Perform independently, the Doppler and Color Doppler application for calculation of aortic and mitral stenosis, and all valvular insufficiencies. These include pressure half time, deceleration time, Bernoulli and continuity equation.
- Demonstrate knowledge of normal Doppler values for valvular flow
- Recognize varying respiratory patterns in the IVC in the subcostal window, and apply these patterns to giving an estimation of RA pressure.
- Assist the physician and/or the sonographer during the stress echo and TEE procedure.
- Demonstrate knowledge of the reasons "why" the stress echo or TEE is performed.

**During weeks 9-15, student should be able to:**

- Continue performance of the above objectives for weeks 1-8.
- Student will continue to apply their knowledge and skills for patient care and communication.
- Student will continue to help sonographer in any way possible; such as patient transfer, portable scanning, and department maintenance.
- Student will demonstrate continued confidence in scanning

- Student will demonstrate entry level skills for their 2D and M-mode scanning
- Student will demonstrate entry level skills in routine Doppler/Color interrogation and calculation of formula
- Student will apply information and knowledge of additional pathological cardiac states as learned in DMS 240.
- Student will always remain professional and possess a positive attitude toward themselves, coworkers, physicians, and most important---the patients

## **ASSIGNMENTS:**

### **1) Goals and Accomplishments:**

- a. Each student will submit a short but meaningful list of goals that they would like to accomplish in this final semester of the program. This will be due at the beginning of the semester (due date Sept. 12) and again at mid-semester (due date Oct 31). At mid-semester and again at the end of the semester, the student will write their **goals obtained** (Oct. 31 and Dec 12).
- b. You will post this assignment in the Private Clinical Forum with your clinical coordinator.

**2) Discussion Forums:** There are discussion forums (Clinical Happenings) set up for you to converse and compare clinical experiences. Share your cases and your challenges as you move toward completing your clinical.

**3) Private Clinical Discussion:** This discussion area will be awarded points for your entries. Feel free to post more often than required. This is a very useful forum for both instructor and student.

**4) Scanning Competencies:** Scanning competencies 11-14 to be successfully completed.

**5) Research Study:** Two short research studies. Topic to be on an accompanying modality to the echo. For instance, cardiac MRI, interventional cardiac study, cardiac CT, 3D echo, Nuclear study. Surgical procedures also allowed as topic. Mitral clip, prosthetic valves, TAVR, anything up-and-coming.

**One and a half to two pages required.** You can also add images or perhaps this is a study that you know of that required further work-up. If you have questions about the topic or length, please check with me.

**These papers must include references.**

Scanning sheets	20 pts total		
Goals and Accomplishments	20 pts total 5 pts per entry x 4 entries	95-100%	4.0
Clinical Happenings	15 pts @ 3 pts each required entry	90 -94%	3.5
Private Clinical Discussion	15 pts @ 3 pts each required entry	84-89%	3.0
Research Study	30 pts @ 15 pts each study	80-83%	2.5
Mid-term eval	100 pts	75-79%	2.0
Final eval	200 points	70-74%	1.5
Total points	400 points		

**GRADE POLICY:** STUDENT MUST RECEIVE A 2.0 OR HIGHER IN ALL ECHO 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.

**NOTE:** 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.

**GRADING PROCEDURE\*:** Students will be graded on various aspects concerning their clinical course:

Clinical log sheets must be completed and submitted at the end of the semester in order for a grade to be issued.

Clinical time sheets (calendars) must be completed, signed by clinical instructor and submitted at the end of the semester in order for a grade to be issued.

The student is responsible to keep track of their clinical hours on the provided calendar and have this calendar signed by their clinical instructor weekly.

Students will adhere to a professional clinical dress code as required by the assigned clinical assignment.

Clinical rotation visits will be made by the program coordinator or representative and reports filed.

Clinical evaluation will be completed and submitted at the end of the semester in order for a grade to be issued.\*\*

Student's grades will be based on his/her ability to complete satisfactorily the performance objectives.

Student's attitude toward the clinical experience, staff, etc. will be considered in the grading process.

Student's communication/interpersonal skills will be evaluated and considered in the grading process.

Reports of excessive tardiness (>1 incident per 2 week period) or absences (>1 incident per 2 month period) may affect your clinical grade.

**\*Please see the Cardiac Sonography Clinical Manual for a more complete list of policies and course/clinical requirements.**

Students should be advised that clinical rotations to other clinical affiliates might be required to complete this course.

\*\*Late clinical evaluations (due date designated on the evaluation) will affect your final grade and may possibly incur an INCOMPLETE "I" grade being submitted to the registrar's office. Program completion will be delayed until all documents have been received by the Program Director and a grade issued.

**STUDENT'S RESPONSIBILITIES:** Students are expected to arrive at their clinical site on time and ready to work. Students need to review their course objectives frequently to assure that they are met. Objectives may be demonstrated during clinical visits by the program coordinator/instructor. It is the responsibility of the student to adhere to the syllabus objectives, the Clinical Manual policies, as well as the DMS Handbook.

**Academic Honesty Policy:** (you may need to copy and paste this link into your browser)  
<https://www.jccmi.edu/wp-content/uploads/1004.pdf>

**Student Complaint Process:** (you may need to copy and paste this link into your browser)  
<https://www.jccmi.edu/?s=ombudsman>

**Center for Student Success:**

At the Center for Student Success, we are committed to providing all students the opportunity to achieve academic success by providing a variety of support services free of charge to JC students. This includes, but is not limited to, peer and faculty tutoring, assistance with transportation, various workshops and seminars, TRiO programs, student employment, and social work services.

In addition, the Center for Student Success (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.

<http://www.jccmi.edu/success/>