JACKSON COLLEGE

2020

CARDIAC SONOGRAPHY

CLINICAL MANUAL

A GUIDE FOR STUDENTS AND CLINICAL INSTRUCTORS

Commission on Accreditation of Allied Health Education Programs
INTRODUCTION

The Cardiac Sonography Program is one of three CAAHEP (Commission on Accreditation of Allied Health Education Programs) Accredited Sonography specialties offered at Jackson College.

The cardiac sonography courses are formatted for online presentation. This means that the student signs onto a course management system through JC’s website for their lecture, discussion, and assessments. Students will also review videos, discuss case studies, and learn from educational websites on the Internet. Not to be confused, clinical courses are not performed online. Each student will obtain a total of 1136 hours over a span of nine (9) months in a qualified clinical education center.

With courses being formatted for online presentation, we can reach students in various parts of the country that lack the existence of an Associate Degree accredited cardiac sonography program. Clinical sites are established for these students and they receive an equivalent education as our local students here in the Jackson area.

All students are required to attend a pre-clinical course, DMS 196, which prepares them for hands-on scanning skills in the hospital setting. This course runs for nine (9) weeks, and the student will accumulate 105 hours of training within this time. In this lab course, students are scanning with experienced registered cardiac sonographers. Pre-clinical competencies that assess technical skills as well and affective domain properties are a requirement in this course.

The curriculum of the Cardiac Sonography program is based on the educational outlines set by the American Society of Echocardiography (ASE) and the American Registry for Diagnostic Medical Sonographers (ARDMS). It is meant to provide a structured, comprehensive education for the student.
CARDIAC SONOGRAPHY PROGRAM

Philosophy Statement

The philosophy of the Cardiac Sonography Program is unified by common goals, which include thoughtful and 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; and upon successful achievement of these goals, program outcomes are fulfilled. Graduates of this program are prepared for entry-level cardiac sonographer positions, and have proven competence to:

- Demonstrate the ability to operate cardiovascular ultrasound equipment, and determine proper technique to produce quality sonographic images (psychomotor).
- Demonstrate the ability to obtain, assess, and analyze cardiovascular sonographic images for the purpose of physician diagnosis (cognitive).
- Demonstrate the ability to recognize normal and abnormal cardiovascular anatomy, and recognize cardiovascular pathologic conditions (cognitive).
- Demonstrate the ability to anticipate and provide basic patient care and comfort during sonographic procedures (affective).
- Display behaviors and attitudes that show sensitivity and acceptance of individual and cultural differences---respecting diversity (affective).
- Demonstrate readiness to sit for national board exams by meeting or exceeding measureable didactic and clinical benchmarks (cognitive and psychomotor).
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th></th>
<th>DMS 144</th>
<th>24-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philosophy Statement</td>
<td>2</td>
<td>DMS 240</td>
<td>25-27</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>3</td>
<td>Clinical Log Sheet</td>
<td>28</td>
</tr>
<tr>
<td>Mission Statement-GOals</td>
<td>4-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Instructor</td>
<td>5</td>
<td>Student Acknowledgement</td>
<td>31</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>6-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spatial Ability</td>
<td>6-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Attire</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absence</td>
<td>8-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tardiness</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of work hours</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cell phone</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Access at clinical site</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials on site</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Record Keeping</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Calendar</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Organizations</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe Clinical Practice</td>
<td>12-13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIPAA</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Performance</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance of Seminars</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Objectives</td>
<td>14-17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Degree Schedule</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texts Required</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Schedule 2020</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didactic Courses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMS 140</td>
<td>21-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMS 141</td>
<td>22-23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMS 196</td>
<td>23-24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
JACKSON COLLEGE CARDIAC SONOGRAPHY PROGRAM

The Jackson College Cardiac Sonography Program was established using the Standards and Guidelines published by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), which acts upon the recommendations of the Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS). The Program has been CAAHEP accredited since 2004.

Commission on Accreditation of Allied Health Education Programs
25400 U.S. Highway 19 North, Suite 158
Clearwater, FL  33763
Phone: 727-210-2350
Fax: 727-210-2354

MISSION STATEMENT

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.

CLINICAL INSTRUCTOR

Responsibilities
Although students will work with many sonographers in the clinical setting, a clinical instructor (CI) shall be designated as the primary contact for the student and the program director or program coordinator. The clinical instructor must be available to students whenever he or she is assigned to a clinical site, provide appropriate clinical supervision, and be responsible for student clinical evaluation.

Qualifications
The designated clinical instructor must hold the RDCS (through the ARDMS) credential or the RCS (through CCI) credential and have appropriate education and experience to fulfill the responsibilities of the position.
CRITICAL THINKING AND SPATIAL ABILITY

Spatial Abilities

Possession of spatial abilities is a critical component to master success in all facets of scanning the echocardiogram. To possess the ability to conceptualize structures without actually seeing them, but knowing their location due to the structures that ARE visualized is a necessity for succeeding in cardiac sonography. Students must display spatial abilities.

Critical Thinking Evaluation Guide For Students and Clinical Instructors

Successfully performing a complete echocardiogram requires a combination of required and/or innate skills and individual traits. These skills are used to acquire, assess, and analyze the echocardiogram. All three must be mastered in this cardiac sonography program. At various points in the program, certain objectives must be mastered in order to move on to more advanced areas. Inability to progress to these more advanced levels within a defined timeframe will result in failure of clinical. This failure can happen at any time in the program. Sometimes a student is successful in early competencies, but is not successful in the more advanced competencies. Sometimes a student can acquire and assess the echo, but cannot demonstrate and apply critical thinking skills that are required for completing a study. A student might be successful until the final semester, only to fail due to lack of required higher-level critical thinking skills, or from a lack of understanding every facet of obtaining and comprehensively analyzing the echocardiogram. A student cannot be a graduate of the program and released into the profession without mastering the objectives.

A. Examples of skills required to acquire images and clips.

1. Skilled at maneuvering transducer appropriately.
2. Skilled at adjusting patient position to obtain and optimize image.
3. Skilled at using machine functions to optimize images.
4. Skilled at obtaining images in a 2D plane, then constructing/conceptualizing a 3D image.
5. Innate or acquired spatial recognition skills (ability to know where structures are, in adjacent to visualized structures, and the ability to locate and image them if needed).

B. Examples of skills required to assess images and clips.

1. Skill and ability to learn and retain information.
2. Knowledge and skills to apply normal values, abnormal values, and equations.
3. Skilled at correct placement of 2D cursor placement, correct placement of Doppler gate, and correctly displaying color map and scale.
4. Skilled at obtaining and visualizing anatomy in a 2D plane, then constructing/conceptualizing a 3D image.
5. Innate or acquired spatial recognition skills.

C. Examples of skills required for analyzing images and clips.
1. Skilled at recognizing and verbalizing abnormal 2D, M-mode, Doppler, or Color Doppler images.
2. Skilled at reconstructing/conceptualizing 2D image planes into 3D structures.
3. Skilled at knowing/recognizing/verbalizing when the echo needs additional images.
4. Skilled at knowing/recognizing/verbalizing when further investigation is needed due to what is seen on routine imaging.
5. Skilled at application of learned information to the interpretation of the echo.
6. Skilled at asking appropriate questions to the teaching sonographer to learn.
7. Demonstrates inquisitive nature.
8. Skilled at recognizing and verbalizing a problem.
9. Skilled at problem solving.
10. Skilled at obtaining and visualizing anatomy in a 2D plane, then constructing/conceptualizing 3D images.

**To demonstrate success at the above objectives and skill requirements, the following outcomes must be achieved.**

1. Student must receive a passing grade on all Scanning Task Sheets.
2. Student must receive a passing grade on all Mid-term and Final Evaluation Forms.
3. Student must receive a passing grade on all Affective Evaluations.
4. Student must receive a passing grade on Critical Thinking Evaluations.

Any student who does not meet minimum requirements in any of the above four (4) assessment areas will fail clinical and not be able to continue in the program. As mentioned above, it is possible to fail at any time in the program as skills are built as building blocks, and sometimes a student cannot achieve the advanced level skills that are presented toward the end of the program.

Examples of situations that can result in failure of clinical are listed below. This is not a complete list, but this contains scanning and critical thinking requirements. Student demonstrates:

1. Ability to acquire images, but cannot (routinely) assess or analyze images.
2. Ability to acquire and assess images, but cannot critically analyze the images (single image, or combination of images) to create a complete diagnostic echocardiogram that is to be interpreted by the student for a preliminary report, and by the physician for a formal report.
3. Inability to routinely recognize echo abnormalities.
4. Inability to recognize the need to extend the exam upon discovery of echo abnormalities.
5. Inability to retain information and mentor’s teachings for application to the hands-on performance.
6. Inability to (or does not) apply didactic learning to hands-on practice.
CLINICAL COURSE POLICIES

Clinical Attire and Grooming:

Students will dress according to their assigned clinical site’s guidelines. Aside from the dress requirements, students are required to appear presentable and professional. Clinical attire includes:

- Scrubs-well fitting, clean and wrinkle free
- A plain, fitted long-sleeved shirt under scrub top may be worn
- Appropriate comfortable shoes-clean, and socks worn
- Name tag-either provided by the clinical site or the student
- Jewelry-limited to rings on fingers (not excessive in size or number), small pierced earrings, short necklace, wristwatch
- Fingernail polish if allowed by clinical site, to be clear or pale in color; clean and trimmed nails, no nail extensions
- No excessive makeup, perfume/cologne or perfumed lotions as patients with asthma, allergies, or other lung conditions may be sensitive
- Hair-clean and well groomed, pulled back if long to avoid violation of the principles of medical asepsis
- Student may be sent home if dress attire and/grooming is inappropriate.
- If there are any questions regarding the clinical attire, please contact the Program Director or Program Clinical Coordinator.

Allowable Time Off:

Students are allowed two sick days (16 hours) and four vacation days (32 hours) during the program.

Absence:

Attendance at clinical assignments is part of the clinical grade. One (1) absence of eight (8 hours) is allowed in each of the second and third semesters of the program.

Students are in clinicals for four (4) days per week. This allows one (1) full day each week for any doctor appointments, dentist appointments etc. Students are expected to schedule outside commitments on days other than clinical days.

Students are expected to treat their clinical externship as an employment (or an extended interview) at the clinical site. Tardiness and attendance issues are taken very seriously. Your display of good or poor habits is being closely observed by your clinical instructor as well as your mentors at the clinical site, and these habits are indicative of your future work ethic.
Any absences beyond the allowed must be made-up within the same semester that the absence occurred. Vacation days can be substituted for make-up time.

A ‘Clinical Time-Off Request’ must be submitted to the clinical instructor and the Program Director for verification of the absence and make-up day. Lunchtime cannot be used for make-up time. You must make-up the missed time on your clinical ‘day off’.

More than one (1) absence per semester may affect the student’s clinical grade and will result in the student warning process being initiated.

**Vacation Hours:**

A ‘Clinical Time-off Request’ form must be completed and approved by the clinical instructor and the Program Director within four (4) weeks of the requested time off. **Vacation hours are to be taken during the months of June through November.**

**Unscheduled Absence (Sick Day):**

If an unforeseen situation results in the student being absent from a clinical day, the student must notify the clinical site/clinical instructor and the Program Director at least 30 minutes prior to the designated start time of the workday. Contact must be by phone to the clinical instructor, and contacting the Program Director can be by phone or via email. Failure to notify the clinical site and the Program Director will count as a ‘no-call, no-show’ occurrence. One such occurrence will result in the Student Warning process.

**Tardiness:**

Being tardy means: not being available to work at the designated start-time of the day. If your start-time is 8 am, then you should arrive well enough prior to 8 am to store your personal items etc., and be present in the echo lab at 8 am. More than one (1) tardy accrued in a four-week period will count as a four hour (4) absence. This absence will need to be made up within the semester that the tardies occurred.

More than one (1) tardy accrued in a four-week period will result in the warning process being initiated.

If a pattern of tardiness becomes apparent, and/or persists across semesters, the student will attend a student/faculty consultation, and the student warning process may result in dismissal from the program.

**Student Responsibilities at the Clinical Site**

Student must follow all established rules or regulations of the clinical site.
Student must at all times maintain a professional appearance and attitude, as well as display appropriate behavior and work ethic. This is a fundamental expectation of the profession (SDMS Code of Ethics) and of the JC Cardiac Sonography Program.

Student is expected to arrive at their clinical site echo lab in proper attire and ready to scan at the time their shift begins. If the student’s shift begins at 8:00 a.m., then the student is expected to be ready to scan at 8:00 a.m. Please see the tardiness policy above.

Students are not permitted to skip lunch in order to leave their shift prior to the end time unless their Clinical Instructor approves the request.

All time accrued beyond the end-time of the day will be noted, but cannot be used for taking time-off or completing the program early. Students are expected to stay beyond their end-time to finish an exam that was started or to finish department housekeeping duties, as any employee of the lab would also do. This is recognized as good work ethic.

Students may only log a maximum of 32 hours per week at clinical. This will be strictly enforced.

Any re-arrangement of clinical hours within the day or within the week must have been discussed and pre-approved by the CI (clinical instructor) and the Program Director. Any re-arrangement in the student’s designated clinical schedule without consultation with the CI and the Program Director will warrant an initiation of the Student Warning Process. No exceptions.

Cell phones are to be kept with student belongings in a secure place. Cell phones are to be turned off or set to silent. Student can check cell phone for messages during designated breaks and lunchtime. Student should provide family and childcare providers with the clinical site’s echo lab phone number for cases of emergency. If there are extenuating circumstances, on a case-by-case basis, this policy can be modified. For modification to this policy, student shall first contact the CI and the Program Director, explain the situation, and a decision will then be made.

Students that do not follow the cell phone policy are in jeopardy of clinical dismissal and dismissal from the program through the student warning process.

Computer Access: Students are not allowed to use the hospital/clinical site computer for any reason except hospital/clinical business, and then only with prior permission given by their clinical instructor.

Studying at the clinical site during clinical time is ONLY permitted if there are no patients, all housekeeping duties have been completed, AND the student has permission from the clinical instructor or the attending sonographer. Study location must be in an area that student can monitor whether a patient has arrived, or their presence is needed for other duties.
**Materials to Have On-Site**

Student must have the following materials available at their clinical site:

- Pocket sized notebook and pen
- Terry Reynold’s Reference Book
- Student Clinical Book (scanning competencies, competency schedule)
- Copy of mid-term and end-semester evaluations
- Log sheets
- Calendar
- Program Director’s contact information and fax number

**Clinical Record Keeping**

Students are required to maintain documentation of clinical performance using forms provided. Completeness and accuracy of these records is part of the clinical grade. These records become part of the student’s official academic file upon completion of the program.

**Calendar:** Student must record exact start and end times for the clinical day. Each week the total hours are tallied, written, and each week is **signed by the student’s CI.** At the end of each month, and at the end of each semester, the student will upload their calendar via the online course management system. The calendar must be signed by the student, and the total hours for the month must be written and circled. ONLY hours within the month can be counted in this total.

**Log Sheets:** Student must record all cases observed or scanned during scheduled clinical days on the Case Log Sheet. Documentation includes type of exam and pathology seen. At the end of each month, and at the end of each semester, student is required to upload the case log sheet for that month via the online course management system.

**Evaluations and Comps:** Student is responsible for following the directions of the Clinical Competency Schedule and the Clinical Evaluation Form for grading purposes. Student is required to notify and submit evaluations and competencies to their clinical instructor two weeks prior to the due dates of such evaluations. Waiting until the final week of the semester to be checked off on scanning task sheets, or to have semester evaluations completed by the CI is discourteous, unprofessional, and can result in initiation of the Student Warning Process. Complete documentation of required competencies that are submitted beyond the designated due date may result in the successful student receiving an ‘Incomplete’ (I) for their semester grade. This action keeps the student from progressing to the next clinical course. Evaluations and competencies will be uploaded via the online course management system.
Clinical Schedule and College Calendar

Clinical schedules do not follow along with the Jackson College academic calendar. It is the student’s responsibility to be aware of their weekly and semester schedule regarding clinical days, holidays, and vacation time. Always refer to the clinical calendar provided.

Inclement Weather

Should Jackson College be closed due to inclement weather, the student will continue to follow the clinical schedule provided to them by the Program Director. In the case of inclement weather in the student’s geographical area, the student should use good judgment and attempt to arrive at their clinical site on time if at all possible, but without placing risk on personal safety. Absence from a clinical rotation due to severe weather must be made up in the semester that it occurred. Extreme weather circumstances will be handled on a case-by-case basis. As with any absence, the student must notify the CI and the Program Director.

Compensation

Students are not allowed to receive wages for their time at the clinical site as a student of the Jackson College Cardiac Sonography program.

Professional Organizations

Students are strongly encouraged to become a member of the professional societies that benefit education and career. The SDMS (Society for Diagnostic Medical Sonographers) and the ASE (American Society of Echocardiographers) are the professional societies for cardiac sonography students. Students are also encouraged to become a member of their local society for echocardiographers.

Student Safe Clinical Practice

Patient safety is a right and a need. Students must practice and adhere to safe practices.

Unsafe clinical practice, if demonstrated by the student, which threatens or violates the physical or emotional safety of the patients, caregivers, staff, or the student themselves, will result in implementation of the Student Warning Process as outlined in the JC DMS Handbook. If the practice warrants, a student may encounter immediate dismissal from clinical, which results in removal from the program. Following are examples of unsafe behaviors. This is not an all-inclusive list.

- Inappropriate use of side rails, wheelchairs, or other equipment
- Lack of proper protection of the patient which could result in a fall or other injury
- Failure to correctly identify patient prior to initiating care
- Failure to perform safety checks of equipment or other devices prior to procedure
- Failure to adhere to universal precautions
- Failure to have appropriate supervision for performing tasks
- Student attends clinical while contagiously ill
- Student fails to recognize the need, or seek help when needed
- Student threatens or makes a patient, or any other person, fearful
- Student displays unstable emotional behaviors
- Student performs actions without appropriate supervision
- Student provides diagnostic information to patient or family
- Behavior non-becoming to the profession (see SDMS code of ethics)
- Verbal or non-verbal language, actions, or voice inflections which compromise rapport and working relations with patients, family members, staff, or physicians, or may compromise contractual agreement and/or working relations with clinical affiliates, or constitute violations of legal/ethical standards
- Violation of HIPAA regulations
- Falsifying data in a patient health record
- Not owning errors
- Leaving the clinical area without notification of faculty and clinical staff or supervisor

**Health Information Confidentiality Policy: Health Insurance Portability and Accountability Act (HIPAA)**

Students must maintain strict confidentiality of all health information of patients at clinical affiliate sites during and after the course of their clinical education. Students may neither use nor disclose health information of patients to which they have access, other than as expressly authorized by the clinical affiliate. Students may not record any patient identifiable information on their personal documents (clinical logs, case studies). Students must be familiar with and adhere to their clinical site HIPAA policy. Any HIPAA violation automatically results in permanent dismissal from the clinical site and therefore dismissal from the program.

**Academic Performance**

The Cardiac Sonography student must maintain a grade of 2.0 or higher in all courses in order to remain and continue on in the program. A student will be dismissed from the program if a required course in the program is unsatisfactorily completed.

**Attendance of Conferences or Seminars**

Jackson College and the Cardiac Sonography Program encourage continuing sonographic education. Students may wish to attend local, regional, or out-of-state conferences/seminars. Clinical credit will be given for each hour of conference courses attended. The Program Director
MUST approve each conference prior to the student attending, if the student is seeking clinical credit hours. Maximum hours for credit allowed are sixteen (16).

**CLINICAL OBJECTIVES (Subject to Modification)**

**DMS 142 Clinical I  Weeks 1-4**

- Student will begin pre-scanning, post-scanning or scanning with assistance.
- Students will learn names of fellow workers.
- Students will know emergency code system, emergency protocols and procedures.
- Students will know location of CRASH CART.
- Students will establish knowledge of where other departments within their clinical institution are located (Emergency dept., pharmacy, cardiac cath lab, intensive care units).
- Students will learn department policies and procedures (phone etiquette, scheduling protocols, exam preps, study documentation procedures, exam protocols, filing systems and required medical history acquisition).
- Students will demonstrate and practice good body mechanics.
- Students will observe staff sonographer testing of patients whenever possible.
- Students will keep a log of all exams observed, post examined by student and performed by student; keeping track of categories. This practice continues throughout all clinical courses.
- Student will aid sonographer in as many ways as possible, including transporting patients, restocking supplies and linens, refilling gel bottles, etc.
- Student will observe and recognize the standard windows and views used for visualizing the heart.
- Student will demonstrate knowledge of basic anatomy of the heart by recitation before, during, or after the exam (depending on supervising sonographer’s preference).
- Student will learn and apply proper positioning techniques for echo exam (including supine, lateral decubitus, LPO, RPO).
- Student will learn proper draping (protecting patient’s modesty) and gel application.
- Student will apply safe practices regarding patient care and comfort.
- Student will apply knowledge in proper EKG lead placement.
- Student will practice proper aseptic practices and personal hygiene throughout the entire clinical course.
- Student will recognize appropriate scan planes and the manipulation of the transducer.

**Weeks 4-7**
Student will utilize various machine controls and functions for obtaining the proper echo image. 
Student will continue to pre-scan, post-scan and scan with assistance. 
Student will show ability to obtain proper images and views using the accompanying acoustic windows. 
Student will perform m-mode or 2D on AORTA/LA structures and apply measurements according to protocol, as well as recite normals. 
Student will perform m-mode or 2D measurements on RV/LV structures according to department protocol, as well as recited normal. 
Student will perform m-mode on the mitral valve apparatus. 
Student will continue to observe sonographer testing of exams. 
Student will become more successful at: obtaining proper image planes in 2D, correct m-mode alignment for accurate measurements. 
Student will demonstrate ability to set up a patient for exam, including complete history taking, proper EKG lead placement, correct patient positioning and patient entry into the machine. 
With aid of supervising sonographer, student will review patient’s history and other chart records as needed to correlate with present exam. 
Student will continue to maintain proper interpersonal skills, patient care, attitude and professionalism in their clinical course.

**DMS 148 Clinical II  Weeks 1-8**

Student will continue to practice and perfect objectives assigned to them in DMS 142, Clinical I. 
Student will become more aware of patient rights and responsibilities as stated by their practicing institution. 
Student will optimize the 2D image using depth, gain, DGC, zoom, and harmonics. 
Student will perform ejection fraction calculations using 2D or m-mode images and correlating its accuracy with the 2D real time study. 
Student will perform Doppler studies using correct placement of Doppler gate for each valve study. 
Student will perform with assistance, 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. 
Student will recognize abnormal Doppler patterns such as valvular stenosis and regurgitation. 
Student will recognize the aliasing pattern and perform correction using baseline or velocity scale. 
Student will demonstrate knowledge of normal Doppler values for valves.
Student will continue to recognize and acquire the routine imaging planes and anatomy for the complete echo. This will include not only the “easy to scan patient”, but also the minimally difficult to scan patient.

Student will recognize varying respiratory patterns in the IVC in the subcostal window, and apply these patterns to giving an estimation of RA pressure.

Students will recognize common abnormal m-mode patterns, such as LAE, LVE, RVE, LVH, decreased mitral leaflet mobility, aortic leaflet calcification and decreased mobility.

Student will demonstrate ability to take a visual look at the echo and recognize its attributes to being a normal vs abnormal study.

**Weeks 8-15**

- All of the above objectives for weeks 1-6.
- 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.
- Continued confidence in scanning
- Student will be more proficient in Doppler and formulas, and acquire the ability to perform these calculations more independently
- Student will recognize wall motion abnormalities and decreased global systolic function.
- Student will perform wall motion index studies if the clinical site performs this task.
- Student will always remain professional and possess a positive attitude toward themselves, coworkers, physicians, and most important---the patients

**DMS 244 Clinical III  Weeks 1-8**

- 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.

Weeks 8-15

➢ 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
CARDIAC SONOGRAPHY ASSOCIATE DEGREE SCHEDULE

1st Year - Gen-Ed Core

**Winter 15 Weeks**
- HOC 130 Introduction to Health Occupation 3 credits
- BIO 132 Human Biology 4 credits*
- ENG 131 Writing Experience 3 credits
- PHY 131/145 General Physics 4 credits
- **14 credits**

**Spring 15 Weeks**
- MAT 131 Intermediate Algebra 4 credits
- DMS 100 Intro to Diagnostic Medical Imaging 3 credits
- MOA 120 Medical Terminology 3 credits
- **10 credits**

**Fall 15 Weeks**
- DMS 104 Intro to Sonographic Instrumentation 3 credits
- HUM 131 Cultural Connections 3 credits
- PSY 140 Introduction to Psychology 4 credits
- COM 231 or 240 Communications, Speech 3 credits
- **13 credits**

2nd Year - Echo Core

**Winter 15 Weeks**
- DMS 140 Echo Orientation and Technique 3 credits
- DMS 141 Adult Echo I 4 credits
- DMS 142 Echo Clinical I 2 credits
- DMS 196 Intro to Cardiac Clinical 5 credits
- **14 credits**

**Spring 15 Weeks**
- DMS 144 Cardiovascular Principles 3 credits
- DMS 148 Echo Clinical II 7 credits
- DMS 206 Sonographic Instrumentation 4 credits
- **14 credits**

**Fall 15 Weeks**
- DMS 240 Adult Echo II 4 credits
- DMS 244 Echo Clinical III 6 credits
- **10 credits**

*Or BIO 132, or BIO 253 and 254
Required Texts


  *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.


Additional Texts (Not Required)

  *Textbook Zero!* E-book (Kindle) option available. [www.amazon.com](http://www.amazon.com)

Additional Required Learning Resource

- Simulation Echocardiography by KeLabs. [https://www.kelabs.com/products/introduction-to-echocardiography](https://www.kelabs.com/products/introduction-to-echocardiography) **This can only be purchased through the JC bookstore.**
### DMS 196 and CLINICAL SCHEDULE 2020

<table>
<thead>
<tr>
<th>Winter semester 2020</th>
<th>January 13 – March 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS 196 - Approximately twelve (12) hours per week x 9 weeks.</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>105 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Winter semester 2020</th>
<th>March 23 thru May 27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three (3) 8.5* hour days per week x 3 weeks and four (4) 8.5 hour days x 6 weeks.</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>280 hours</td>
</tr>
</tbody>
</table>

*Student may count only 8 hrs daily. Cannot include .5 hr lunch into clinical hrs.*

<table>
<thead>
<tr>
<th>Spring semester 2020</th>
<th>May 28 thru August 28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four 8.5 hour days per week x 15 weeks.</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>424 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall semester 2020</th>
<th>August 21 thru December 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four 8.5 hour days per week x 15 weeks</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>464 hours</td>
</tr>
</tbody>
</table>

**Total clinical hours = 1168** (vacation and sick days included)

**Holidays:** Memorial Day, July 4, Labor Day, Thanksgiving and day after.
## DIDACTIC COURSES

### DMS 140 Sonographic Orientation and Technique

<table>
<thead>
<tr>
<th>WEEK #</th>
<th>DATE</th>
<th>TOPIC</th>
<th>HOMEWORK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Windows and Views-more Anatomy on 2D images Wall segment introduction</td>
<td><em>Vocabulary Part I – DUE JAN 19</em></td>
</tr>
<tr>
<td>2</td>
<td>Jan 20 -26</td>
<td>Windows and Views-more Anatomy on 2D images Wall segment introduction</td>
<td><em>Dewitt</em> pgs 45-55, View videos, ppt. and all links <em>Quiz 1 – DUE JAN 26</em></td>
</tr>
<tr>
<td>6</td>
<td>Feb 17 - 23</td>
<td>Doppler and the Doppler exam</td>
<td><em>Dewitt</em> pgs 58- 64, <em>Anderson</em> 83 – 103 Cardiac Articles &amp; Quizzes *Doppler Worksheet, WorkBook 7 Qs, &amp; Quiz 3 – DUE FEB 23</td>
</tr>
<tr>
<td>7</td>
<td>Feb 24 – Mar 1</td>
<td>Color Doppler, Clinical Indications for the Echo Patient care, Quality assurance and Clinical prep</td>
<td><em>Otto</em> 61-65 (including tables), 120 – 130, 133 – 141 (including tables), <em>Anderson</em> 129 – 137, Review for Midterm, Review ASE Documents</td>
</tr>
<tr>
<td>8</td>
<td>Mar 2 - 8</td>
<td>Midterm</td>
<td>Midterm Exam</td>
</tr>
<tr>
<td>9</td>
<td>Mar 9 - 15</td>
<td>Winter Break</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Mar 23 - 29</td>
<td>TEE SDMS Code of Ethics</td>
<td><em>Otto</em> 67-93, <em>Dewitt</em> 123-132 <em>Quiz 4 – DUE MARCH 29</em></td>
</tr>
<tr>
<td>12</td>
<td>Mar 30 - April 5</td>
<td>Terms and Definitions, HIPAA LV Function &amp; Intro to Stress Echo</td>
<td><em>Cardiac Quizzes - DUE APRIL 5</em></td>
</tr>
<tr>
<td>WEEK #</td>
<td>DATE</td>
<td>TOPIC</td>
<td>HOMEWORK</td>
</tr>
<tr>
<td>-------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Jan 13 - 19</td>
<td>Orientation, Anatomy of the chest and heart. Cardiac cycle</td>
<td>Dewitt pgs 5-24 (stop at #9.) Quiz 1 – DUE JAN 19</td>
</tr>
<tr>
<td>2</td>
<td>Jan 20 - 26</td>
<td>Cardiac Conduction</td>
<td>Dewitt pgs 29-34, Harry pgs 15-16, 20, &amp; 22 Quiz 2 – DUE JAN 26</td>
</tr>
<tr>
<td>3</td>
<td>Jan 27 - Feb 2</td>
<td>Systole and Diastole, Normal cardiac physiology, and Coronary vessels.</td>
<td>Dewitt pgs 1-4 WorkBook 7 Qs pages 7-17 DUE FEB 2</td>
</tr>
<tr>
<td>5</td>
<td>Feb 10 - 16</td>
<td>Valves, M-mode and 2D</td>
<td>Anderson 75-80, Otto 49-52 and images, Harry 23-24</td>
</tr>
<tr>
<td>6</td>
<td>Feb 17 - 23</td>
<td>The complete Exam and Regurgitation (what is it and what does it look like)</td>
<td>Part I – Anderson pgs 129-137, Dewitt pgs 164-166, 169-170 Part II - Anderson 33-81, Harry 72-104, Dewitt pgs 65-106</td>
</tr>
<tr>
<td>7</td>
<td>Feb 24 - Mar 1</td>
<td>Aortic Valve Aortic Stenosis</td>
<td>Anderson pgs 233-240, Dewitt 164-168, 187-194 Otto 288-305, Mark Harry 105-113, 115-120, Mark Harry PDF extra reading on JetNet Quiz 3-Aortic WS &amp; Mark Harry WS DUE MAR 1</td>
</tr>
<tr>
<td>8</td>
<td>Mar 2 - 8</td>
<td>Midterm</td>
<td>Midterm Exam – DUE MAR 8</td>
</tr>
<tr>
<td>9</td>
<td>Mar 9 - 15</td>
<td>Winter Break</td>
<td>Continue readings from week 7 on AS WorkBook 7 Qs pages 57-65 DUE &amp; Quiz 4 – DUE MAR 22</td>
</tr>
<tr>
<td>10</td>
<td>Mar 16 - 22</td>
<td>Continue week of Aortic Valve and Aortic Stenosis</td>
<td>Otto 305-315, Anderson 244-247, Harry 149-161, Dewitt pgs 171-176 Mitral WS and Mark Harry Q&amp;A WS - DUE MAR 29</td>
</tr>
<tr>
<td>11</td>
<td>Mar 23 - 29</td>
<td>Mitral Valve Part I</td>
<td></td>
</tr>
</tbody>
</table>
### DMS 196 Introduction to Cardiac Clinical

<table>
<thead>
<tr>
<th>WEEK #</th>
<th>DATE</th>
<th>TOPIC</th>
<th>HOMEWORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 14</td>
<td>Program Orientation, Intro to machines, Lab Policies, Scan PLAX</td>
<td>Read Cardiac Clinical Manual, Videos</td>
</tr>
<tr>
<td></td>
<td>Jan 16</td>
<td>PLAX, Ao, MV, Affective Domain</td>
<td>ASE Video</td>
</tr>
<tr>
<td></td>
<td>Jan 17</td>
<td>PLAX, AO, MV, PSAX</td>
<td>Videos, PPT</td>
</tr>
<tr>
<td>2</td>
<td>Jan 21</td>
<td>PSAX, RVIT, RVOT</td>
<td>ASE Video</td>
</tr>
<tr>
<td></td>
<td>Jan 23</td>
<td>PSAX, RVIT, RVOT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jan 24</td>
<td>All parasternal views, 2D Put it all together</td>
<td>Quiz 1 PLAX, PSAX Competency 1</td>
</tr>
<tr>
<td>3</td>
<td>Jan 28</td>
<td>Apical 4, 5, 3, 2</td>
<td>Apical 2D PPT, ASE Videos, Diagrams Competency 1</td>
</tr>
<tr>
<td></td>
<td>Jan 30</td>
<td>Apical 4, 5, 3, 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jan 31</td>
<td>No Class</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Feb 4</td>
<td>Apical 4, 5, 3, 2</td>
<td>Videos, Diagrams</td>
</tr>
<tr>
<td></td>
<td>Feb 6</td>
<td>Subcostal, SSN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feb 7</td>
<td>Subcostal, SSN, Wall Segmentation</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Feb 11</td>
<td>PLAX M-Mode and 2D measurements</td>
<td>Videos, Diagrams, PPT, Documents Quiz 2 Apicals, SSN, Subcostal Competency 2</td>
</tr>
<tr>
<td></td>
<td>Feb 13</td>
<td>PLAX M-Mode and 2D measurements</td>
<td>Competency 2</td>
</tr>
<tr>
<td></td>
<td>Feb 14</td>
<td>PSAX measure</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Feb 18</td>
<td>Spectral and color Doppler PLAX, Blood Flow</td>
<td>Videos</td>
</tr>
<tr>
<td></td>
<td>Feb 20</td>
<td>Spectral and color Doppler PSAX, Apical 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feb 21</td>
<td>Spectral and color Doppler Apical 4</td>
<td>Quiz 3 Measurements Competency 3</td>
</tr>
<tr>
<td>7</td>
<td>Feb 25</td>
<td>Spectral and color Doppler Apical 4, 5, 3, 2</td>
<td>Competency 3</td>
</tr>
<tr>
<td></td>
<td>Feb 27</td>
<td>Spectral and color Doppler 4, 5, 3, 2, Aortic Stenosis</td>
<td></td>
</tr>
<tr>
<td>WEEK #</td>
<td>DATE</td>
<td>TOPIC</td>
<td>HOMEWORK</td>
</tr>
<tr>
<td>-------</td>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>May 28</td>
<td>Aortic Insufficiency</td>
<td>Otto 336-345. Anderson 249-275, &amp; pg 121 ‘Doppler Examination of the Descending Aorta, &amp; pg 73 Fg 3.5 Feigenbaum pg 263 - 280, This reading is put together better than what Otto did for AI. You should view images, captions and clips found within this reading. Mark Harry all of Chapter 7 Lesson 1 – Read Harry AR PDF pg 147-166. Work AR Case Study WS questions 1-13, 21-24, 29-36, 46-47 DUE Quiz 1 – DUE</td>
</tr>
<tr>
<td>2</td>
<td>June 8</td>
<td>Tricuspid and Pulmonic Regurgitation Pulmonary Hypertension</td>
<td>Otto pg 168-174, 262-264, pg 313 on Pulmonary HTN, 315-319, &amp; 359-367 Feigenbaum pg 324-343 &amp; 702-706 Harry RT Heart PDF pg 101-106 Questions 6-8 on pg 115 and Questions 20-30 on pgs 120-122 - DUE Quiz 2 - DUE</td>
</tr>
<tr>
<td>3</td>
<td>June 15</td>
<td>Coronary Artery Disease Myocardial Infarction Cardiac Catheterization Stress Echo I</td>
<td>Otto pg 204-232 Feigenbaum 427-458 &amp; 460-487 Feigenbaum Images, captions, and clips. It is to your benefit that you watch the clips during your reading. Worksheet CAD, Quiz 3 - DUE</td>
</tr>
<tr>
<td>4</td>
<td>June 22</td>
<td>Cardiac Catheterization cont. Heart Sounds/Auscultation</td>
<td>Website: <a href="http://www.blaufuss.org/tutorial/#">http://www.blaufuss.org/tutorial/#</a></td>
</tr>
</tbody>
</table>
Follow through with the Heart Sounds Tutorial
Quiz 4 – DUE

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Homework</th>
</tr>
</thead>
</table>
| 5    | June 29| Test I                               | Embryology
Adult Congenital
ASD, VSD
Cardiac Physiology
Otto pg 473-504
Feigenbaum pg 563-593
All images, captions and video clips
Quiz 5 – DUE |
| 6    | July 6 | Embryology
Hemodynamics I
Doppler
Characteristics of Flow | Q & A Worksheet - DUE |
| 7    | July 13| Hemodynamics II
Characteristics of Flow | Quiz 4 – DUE |
| 8    | July 20| Test II                              | Test II – DUE |
| 9    | July 27| Hemodynamics II
Characteristics of Flow | Test II – DUE |
| 10   | August 3| Related Modalities                   | Videos, Q and A, Review |
| 11   | August 10| Review                       | Quiz 2 Pericardial disease Due |
| 12   | August 17| Test III                         | Test III Part 1 and 2 – DUE |

DMS 206 Sonographic Instrumentation – Syllabus TBD

DMS 244 Adult Echo II

<table>
<thead>
<tr>
<th>WEEK #</th>
<th>DATE</th>
<th>TOPIC</th>
<th>HOMEWORK</th>
</tr>
</thead>
</table>
| 1      |      | Cardiomyopathy; Dilated and Hypertrophic                              | Otto pgs 235-252, 265-266, Otto LV non-compaction pg, 256 and figure 9-29
Feigenbaum pgs 489-517, 518-536,
All Video Clips |
| 2      |      | Cardiomyopathy; Restrictive Hypertensive Heart Disease, Pulmonary Hypertension, Pulmonary Heart Disease | Otto pgs 252-255
Ischemic CM pgs 228-229, 232
Feigenbaum pgs 536-538
All Video Clips |
| 3      |      | Test I                                                                | Test I Due September 22nd |
| 4      |      | Pericardial Disease                                                   | Otto pgs 268-285
Feigenbaum pgs 217-239
All Video Clips |

Harry HCM Reading Assignment and Questions Due
Quiz 1 Myopathies and Pulmonary Heart Disease Due
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Cardiac Tumors and Masses Endocarditis</td>
<td>Otto pgs 423-445, Feigenbaum pgs 651-690 All Video Clips\nOtto pgs 400-419 Feigenbaum pgs 347-375 All Video Clips \n<strong>Quiz 3 Cardiac Tumors/Masses, Endocarditis and CHD Due</strong></td>
</tr>
<tr>
<td>6</td>
<td>Congenital Heart Disease and Evaluation of the adult with CHD</td>
<td>Otto pgs 473-504 Feigenbaum pgs 544-563 \n<strong>Quiz 3 Cardiac Tumors/Masses, Endocarditis and CHD Due</strong> \n<strong>Midterm Exam</strong> Part I Case Video #4 Worksheet and Part II Midterm Exam Due</td>
</tr>
<tr>
<td>7</td>
<td>Midterm Exam</td>
<td>Cardiac Transplantation Otto pgs, 258-259 Feigenbaum pgs 506-508 All Video Clips \nLVAD Otto pgs 257-258, Feigenbaum pgs 509-514 All Video Clips</td>
</tr>
<tr>
<td>8</td>
<td>Cardiac Transplantation and LVAD</td>
<td>Otto pgs 370-398 Feigenbaum pgs 377-425 All Video Clips \n<strong>Quiz 4 Prosthetic Valves and Cardiac Transplant Due</strong></td>
</tr>
<tr>
<td>9</td>
<td>Prosthetic Heart Valves</td>
<td>Otto pgs 447-470 Feigenbaum pgs 611-649 All Video Clips \n<strong>Quiz 5 Diseases of Great Vessels Due</strong></td>
</tr>
<tr>
<td>10</td>
<td>Diseases of the Great Vessels</td>
<td>TEE - Otto pgs 67-93 UEAs &amp; ICE - Otto pgs 112-118, Clinical Indications for Echo - Otto pgs 120-133 CRT - Feigenbaum pgs 504-506 \nPoint-of-Care-Handheld - Otto pgs 133-135 Q &amp; A</td>
</tr>
<tr>
<td>11</td>
<td>TEE, Ultrasonic Enhancing Agents, Clinical Indications for Echo, Cardiac Resynchronization Therapy (CRT), ICE, Point-of-Care</td>
<td>Otto pgs 158-175, 198-202</td>
</tr>
<tr>
<td>12</td>
<td>Right Heart PISA Odds &amp; Ends</td>
<td><strong>Midterm Exam</strong> Part I Case Video #4 Worksheet and Part II Midterm Exam Due <strong>Quiz 3 Cardiac Tumors/Masses, Endocarditis and CHD Due</strong></td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>13</td>
<td>3D Echo, Strain and Strain Rate</td>
<td>Anderson pgs 207, 211-212, 270-273, Otto pgs 325-332 &amp; pg 354 (MR), Reynolds pg 351 (MR) Quiz 6 RH and PISA Due</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Board Review Assignment Due December 8th Big Blue Button Session TBA</td>
</tr>
</tbody>
</table>
# Jackson College
Cardiac Sonography Program
Clinical Log Sheet

<table>
<thead>
<tr>
<th>Date</th>
<th>Exam (e.g. TTE, TEE, Contrast, etc.)</th>
<th>Observed</th>
<th>Pre/Post Scanned</th>
<th>With Assistance</th>
<th>Independent</th>
<th>Pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
JACKSON COLLEGE
CARDIAC SONOGRAPHY 2020
CLINICAL TIME OFF FORM

Student name ________________________________ Date _____________________________

Date of absence (sick) ___________________________________________________________

Scheduled absence (Vacation) _____________________________ Four weeks prior notice required.

Semester: DMS 142 ____________ DMS 148 ____________ DMS 244 ____________

Clinical Education Center _______________________________________________________________

Reason for Absence:
_____________________________________________________________________________________
_____________________________________________________________________________________

Is this the first absence in this semester? _______Y   _______ N

Is this the first clinical absence this year? _______Y   _______ N

This is my 1st 2nd 3rd 4th 5th 6th 7th absence this calendar year.

If not the first absence in this semester, state plans for make-up day ______________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

Student’s signature __________________________________________________________

Student name (print) _________________________________________________________

Clinical Instructor signature ____________________________________________________

Clinical Instructor name (print) _________________________________________________
This Clinical Manual for Clinical Site Instructors and students of the Jackson College Cardiac Sonography Program shall not take the place of the Diagnostic Medical Sonography Handbook that is given to students of all DMS Programs. Upon situations where policies are duplicated, the policy in this manual shall take precedence.
Student Acknowledgement of Receipt of the DMS Cardiac Clinical Manual

I hereby acknowledge that I have received, read and understand the Jackson College DMS Cardiac Clinical Manual. I further agree to follow all policies and procedures within the manual.

I understand while attending the clinical site of the DMS Cardiac program, I am expected to follow all reasonable rules and regulations of policies and procedures of the assigned clinical site.

I understand that failure to abide by these rules and regulations may result in dismissal from the DMS Cardiac Sonography program.

DATE: ________________________________

NAME: ________________________________________________

SIGNATURE: ___________________________________________

This acknowledgement form needs to be completed and submitted to the Allied Health Office (JW 231) within ten days after receipt of the DMS Student Handbook.