Adult Echocardiography Certificate Program

Class
DSAE 2303

Anatomy, physiology, and pathophysiology of the cardiovascular system. Focuses on cardiac and vascular structural anatomy and relationships, electrical innervation, embryology, and hemodynamics of the heart and vascular system. Includes pathophysiology, etiology, pathology, signs, symptoms, risk factors, and treatment of cardiovascular diseases. (2-3-0)

Course Learning Objectives

Upon satisfactory completion of the course, the student will be able to:

I. Identify anatomy, anatomic variants, and sonographic appearances of normal cardiac structures. (F1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 15, CI, 11, 12, 13, 14, 15, 19, 20)

1. Embryology and fetal cardiac development
2. Cardiac chambers and septation
3. Coronary artery anatomy and distribution
4. Pulmonary artery and venous return
5. Relationships of cardiac chambers and great vessels
6. Valve anatomy and function

II. Demonstrate knowledge of normal and cardiovascular physiology and hemodynamics. (F1, 3-16, CI, 3, 7-20)

1. Ventricular systolic and diastolic function, including the influence of loading conditions, filling pressures, normal intracardiac pressures, and measurement of cardiac output
2. Electrophysiology and exercise physiology

III. Demonstrate knowledge of mechanisms of disease, cardiovascular pathophysiology, and hemodynamics, sonographic technique, measurements, quantitative principles, and Doppler patterns in both the normal heart and with cardiac disease. (F1, 3-16, CI, 3, 7-20)

1. Valvular heart disease & Prosthetic heart valves
2. Ventricular dysfunction
3. Diastolic dysfunction
4. Ischemic cardiac disease
5. Cardiomyopathy
6. Pericardial disease
7. Congenital heart disease
8. Endocarditis, neoplasms, and masses
9. Cardiac trauma
10. Pulmonary vascular disease
11. Diseases of the aorta and great vessels
12. Intracardiac pressures
13. Cardio-oncology
14. Systemic diseases
15. Systemic and Pulmonary Hypertension

Required Textbooks

Textbook of Clinical Echocardiography. 6th edition. Catherine Otto.
Elsevier. ISBN: 978-0-323-48048-2

The Only EKG Book You'll Ever Need. 9th edition. Malcolm S. Thaler Wolters Kluwer / LWW. ISBN 978-1-4963-7723-4

Adult Echocardiography Review 2nd Edition. Carol Mitchell, PhD, RDMS, RDCS, RVT, RT(R), ACS, FASE, FSDMS, Bridgett Willey, MS, RDMS, RVT, RDCS, RT(R) Davies Publishing. ISBN: 978-0-9410-2281-1

Evaluation Standards

- A 92-100%
- B 85-91%
- C 78-84%
- F <78%

You must achieve a minimum of 78% or higher to pass this course. The components of your course grade are the Assignments (30%); the Quizzes (30%); and the exams - Midterm (20%) & Final (20%).

Absences

Attendance is the biggest predictor of your success. Attendance at every class is expected. You will be allowed to miss 2 class days (except for test days) and/or two lab days (if applicable) without it adversely affecting your grade. Every absence over the allotted days will result in your final grade being reduced by one letter grade. Three tardies of 1-14 minutes each count as one day absent. If you are more than 15 minutes late to lecture or lab it will constitute an absence. You are required to notify the instructor prior to any absence. Failure to do so will result in an unexcused absence.

An exam missed because of an excused absence must be made up the day that you return to class. An exam missed because of an unexcused absence may not be made up, and you will receive a grade of zero (0) for that exam. Pop quizzes may not be made up under any circumstances.

All class and clinical assignments are due on their appointed dates at the designated time. Failure to submit an assignment on time will result in a grade of "0" to be given for the assignment. Although a grade of "0" will be given, the individual instructor reserves the right to ask for completion of the assignment. Failure to comply with request will result in incompletion of the course.

Cell phones shall be stored on silent in your backpack, handbag, or purse. Cell phones may be accessed during breaks

A student shall retain all rights to work created as part of instruction or using College District technology resources.

Instructional Methods

PowerPoint & Online Video Lectures; Laboratory equipment

Disabilities

ADA Statement:

Any student with a documented disability (e.g. learning, psychiatric, vision, hearing, etc.) may contact the Office on the Weatherford College Weatherford Campus to request reasonable accommodations. *Phone:* 817-598-6350 *Office Location:* Office Number 118 in the Student Services Building, upper floor. *Physical Address:* Weatherford College 225 College Park Drive Weatherford, TX.

Academic Integrity

Academic Integrity is fundamental to the educational mission of Weatherford College, and the College expects its students to maintain high standards of personal and scholarly conduct. Academic dishonesty of any kind will not be tolerated. Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials including unauthorized use of Generative AI. Departments may adopt discipline specific guidelines on Generative AI usage approved by the instructional dean. Any student who is demonstrated to have engaged in any of these activities will be subject to immediate disciplinary action in accordance with institutional procedures.

SCANS

The Secretary's Commission on Achieving Necessary Skills (SCANS) identified Competencies in the area of Resources, Interpersonal, Information, Systems, and Technology; and foundation skills in the areas of Basic Skills, Thinking Skills, and Personal Qualities. This course is part of a program in which each of these Competencies and skills are integrated. The specific SCANS Competencies that are recognized throughout this course are noted at the end of the appropriate Competencies or task listed.