

Valencia College
School of Health Sciences
BS Cardiopulmonary Sciences Program
202420-RET-3444-27185
Introduction to Lung and Cardiac Ultrasound

SYLLABUS- SPRING 2024

Instructor: Professor Genny Lee-Dickson, BS, RRT, RDCS
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Student Engagement Hours: Virtual via email and Canvas Inbox

COURSE INFORMATION

Course Title: Introduction to Lung and Cardiac Ultrasound

Credit Hours: 3 credits

Pre-requisite: Admission to BS Cardiopulmonary Sciences Program

Refund of Fees: The Drop/Refund deadline for this course is January 16, 2024

Instructional Method: Canvas Online Learning

Meeting days/times/location: This is an instructor-facilitated online course in the Canvas learning management system. All learning activities, discussions, assignments, and tests are completed online in Canvas. There is 24/7 access to the course, and students are expected to plan their own schedule to complete the readings, learning activities and assignments within the deadlines indicated. There are no required class meetings on campus. The expected time commitment for this 3-credit online course is a minimum of 9 hours of student work and online participation.

Course Description: This course will introduce students to basic principles and concepts of lung and cardiac ultrasound. The focus will be on the application of ultrasound in cardiopulmonary diagnostics, with an emphasis on evaluation of relevant thoracic anatomy, indications for diagnostic studies, basic interpretation, and clinical application of findings.

Course Outcomes:

- Apply basic ultrasound physics and principles to cardiopulmonary diagnostic procedures.
- Identify relevant pulmonary and cardiac anatomy.
- Describe the indications for and clinical applications of lung ultrasound.
- Describe the indications for and clinical applications of cardiac ultrasound.
- Assess thoracic structures of the heart and lungs.
- Analyze and interpret basic ultrasound findings.
- Integrate findings with clinical treatment options.

Valencia College Core Competencies: Valencia faculty have defined four interrelated competencies (Think, Value, Communicate, Act) that prepare students to succeed in the world community. These competencies are outlined in the College Catalog and include:

1. Think- think clearly, and creatively, analyze, synthesize, integrate, and evaluate in the many domains of human inquiry
2. Value- make reasoned judgments and responsible commitments
3. Communicate- communicate with different audiences using varied means
4. Act- act purposefully, effectively, and responsibly.

In this course, through reading, self-assessment and discussion, and other learning activities, you will further develop your mastery of those competencies.

Learning Resources and References

Weekly readings and learning resources will be provided in Canvas.

A Practical Guide to Thoracic Ultrasound: Kelkenberg CFN, Bollinger CT, Deacon AH. Pleural Ultrasound, In: Light RW, Lee YC. Textbook of Pleural Disease. 2nd Ed. London, Hodder & Stoughton, 2008; pp. 275–283.

Transthoracic US of the Chest: Clinical Uses and Applications; Dow-Mu Koh, Stephen Burke, Neil Davies, and Simon P. G. Padley; Radio Graphics 2002 22:1, e1

Better With Ultrasound: Thoracic Ultrasound: Hendin, A, Koenig S, Millington SJ. Chest Journal May 15, 2020.

Textbook References:

Edelman, S.K. (2012) *Understanding Ultrasound Physics 4thed.* E.S.P. Ultrasound, ISBN 0962644455

Otto, C. (2013) *Textbook of Clinical Echocardiography, 5thed.*, Saunders, ISBN 978-1-4557-2857-2

Additional Handouts, Readings and Learning Resources: Additional learning resources will be provided within Canvas by the instructor; Internet-based learning resources and research may also be assigned.

Library Resources: There are a multitude of Valencia Library services available to students; the following services as well as many others can be found at:

- **Borrowing and Circulation.** Students can borrow books from the library; there are also many eBooks available online.
- **Reference Services.** Reference librarians are available to help students. This is a free service on campus to help students with research, located at the library 2nd floor reference desk.
- **Online Resources.** Most research can be done from home, as many resources and help from librarians, are also available online.
- **Free Skillshops.** The Library's Computer Access Lab offers many free, 1-hr workshops on all types of computer software, including Microsoft Office products, Canvas, and Windows.
- **Ask-a-Librarian E-mail, Chat and Texting.** Students can contact a Florida librarian with research

questions using this statewide service with extended hours.

Online Participation/ Attendance Expectations: For online courses, attendance is determined by consistency in logging in and accessing the course content and completing discussion posts and assignments according to the schedule. **According to Valencia policy, students who do not engage in an “academically-related activity” during the first week of class will be dropped as a “No-Show”. There will be a specific assignment to address this requirement posted in Canvas.**

Questions and communication regarding course content should be posted under the specified discussion topic in Canvas. The instructor is available for help via email or by telephone, and via online meetings scheduled at a designated time. Students are encouraged to seek assistance from the instructor as needed. Students are expected to check Canvas and their Atlas email for important communication and updates on a regular basis, and at a minimum of every other day. Failure to participate in online activities and complete discussion posts and assignments due to computer error is not considered to be an acceptable excuse. Technical communication issues that may be experienced by the student should be documented, e.g., copy emails, save screen shots, etc. and communicated to the instructor immediately.

Note: *Just logging into the course does NOT count as attendance. For the instructor to document that you are in the class and actively participating, you must submit the first assignment by the scheduled due date, during Week 1, and continue to stay engaged in the course throughout the entire semester.*

Resources and Technical Requirements for Online Courses: To participate in online courses, students must have access to a computer with reliable internet access. Valencia offers many online resources to help students with the online learning environment. “Getting Started Online, Valencia 101” is a great place to start. Steps needed to determine computer system requirements and browser compatibility, as well as tutorials and strategies for online learning using the Canvas learning system, are all available at : [Learning Technology Resources](#). Additional Canvas resources are available at: [Canvas Resources](#) .

IMPORTANT VALENCIA DATES *

Classes Begin	January 8, 2024
Graduation Application Deadline	February 2, 2024
Withdrawal Deadline	March 15, 2024
Final Exam Week	April 22 – 28, 2024
Holidays – College Closed	Jan 15 – MLK Day Feb 9 – Learning Day Mar 18 - 24 – Spring Break

*The Valencia College Calendar can be accessed at: [Valencia Calendar](#)

ASSESSMENT

The final course grade will be determined from a combination of online assessments:

Quizzes	20%
Discussion Posts	15%
Case Studies	15%
Mid-Term Exam	25%
Final Exam	25%

GRADING SCALE

A	93-100%
B	85-92%
C	76-84%
D	69-75%
F	Below 69%

Weekly Schedule of Topics: Subject to Change; Check Canvas for Updates

Week	Dates	Topic
1	Jan 8 – Jan 13	Basic Ultrasound Physics and Principles
2	Jan 14 - 20	Review of Cardiac Anatomy
3	Jan 21 - 27	Indications for Cardiac Ultrasound; Bedside Applications
4	Jan 28 – Feb 3	Clinical Applications of Cardiac Ultrasound; Relevant Disease Processes
5	Feb 4 – Feb 10	Basic Analysis and Interpretation of Echocardiograms
6	Feb 11 – Feb 17	Basic Analysis and Interpretation of Echocardiograms
7	Feb 18 – Feb 24	Clinical Applications and Treatment Options
8	Feb 25 – Mar 2	Mid-Term Exam
9	Mar 3 – Mar 9	Review of Pulmonary Anatomy
10	Mar 10 – Mar 16	Indications for Lung Ultrasound; Bedside Applications
11	Mar 17 – Mar 23	Spring Break
12	Mar 24 – Mar 30	Clinical Applications of Lung Ultrasound; Relevant Disease Processes
13	Mar 31 – Apr 6	Basic Analysis and Interpretation of Lung Ultrasounds
14	Apr 7 – Apr 13	Basic Analysis and Interpretation of Lung Ultrasounds (con't)
15	Apr 14 – Apr 20	Clinical Applications and Treatment Options
16	Apr 22 – Apr 28	Final Exam

Weekly Quizzes: Each Learning Module will include quiz assessments based on the learning resources assigned. The purpose of these quizzes is to allow you an opportunity to think about the module content and enhance your learning by answering related questions. You can complete each quiz up to 2 times and your highest score will be recorded as your grade. It is recommended that take advantage of both attempts and utilize the quizzes as a tool to practice answering questions and to assess whether you have mastered the module content. Correct answers become available after the second attempt.

Exams: The Mid-term and Final exams will be administered online in Canvas using remote proctor testing, which requires a web cam and microphone. Students will be expected to have web cam prior to the Mid-Term exam. Exams will be made available for a specified two-day period. There is no flexibility in the published Mid-Term and Final exam dates. Students will select a two-hour window on one of the specified dates to complete the exam. No outside resources or assistance may be utilized in completing the exams. Academic integrity policies are expected to be followed. There will be only one attempt for these exams. The printing and/or distribution of any quiz or exam items are strictly prohibited.

Exam Schedule: The Mid-Term and Final Exam dates are announced at the start of the semester and students are expected to plan their schedules accordingly. There is generally no flexibility with these dates, except under rare and extenuating circumstances that have been discussed and approved in advance. Exams cannot not be re-scheduled due to work schedules or vacations.

Completed exams will not be routinely made available for review by the student; however, this may be scheduled by contacting the instructor via phone or e-mail. The printing and/or distribution of any quiz or exam items are strictly prohibited.

Assignments / Discussion Posts: Each week the assignments may include:

- Assigned Readings
- Weekly multiple-choice quiz
- Discussion Posts and Conversations on the relevant topic
- Case Study Analysis

The deadlines and instructions for all quizzes, assignments and discussion posts are described in detail in Canvas.

Work Missed: Students must complete course assignments and activities according to their weekly due dates. Discussion posts are generally due no later than midnight on each Friday, and comments on other student's discussion posts are due no later than midnight on the following Monday. The specific deadlines for all assignments, quizzes and discussion posts are listed in the Weekly Learning Modules. Late assignments may be accepted, at the discretion of the instructor, and should be submitted within one week of the due date, with a 10% penalty. Students who are chronically late and miss excessive assignments may lose this privilege. Extenuating circumstances that interfere with completing course requirements, such as death of a family member, immediate family medical emergency must be documented and may be discussed with the instructor.

Extra Credit Policy: There may be limited opportunities to earn extra credit but not to make up for missed assignments. Extra credit, when made available, will be posted in Canvas as the course progresses. Extra points may be given for exceptional discussion and assignment submissions.

Withdrawal Deadline and Policy: According to Valencia College policy: “A student who withdraws from class before the **withdrawal deadline of March 15, 2024**, will receive a grade of “W.” It is the student’s own responsibility to withdraw before the withdrawal deadline. A student is not permitted to withdraw from class after the withdrawal deadline; if you remain in the class after the withdrawal deadline, you will receive a grade of A, B, C, D, F or I, based on work completed. An “I” grade will only be assigned under extraordinary circumstances that occur near the end of the semester. If you receive an “I”, the work missed must be made up during the following semester, at which time you will get an A, B, C, D or F. Failure to make up the work during the following semester will result in you getting a grade of “F” in the course. Any student who withdraws from this class during a third or subsequent attempt in this course will be assigned a grade of “F.”

If a student does not meet the online participation and attendance requirements described in the syllabus, the faculty member is permitted to withdraw a student from their class up to the beginning of the final exam period. If withdrawn by the instructor, your transcript will reflect a “W” and this will count as one attempt for this course. If you have decided not to complete this course, it is better for you to drop the course yourself during the Add/Drop period to avoid negative consequences. During a first or second attempt in the same course at Valencia, if you withdraw, or are withdrawn by the professor, you will receive a W (Withdrawn). You will not receive credit for the course, and the W will not be calculated in your grade point average; however, the enrollment will count in your total attempts in the specific course.

Note: Students on financial aid should consult an advisor or counselor before withdrawing from a course; there may be financial implications to the student which he or she must know about to make an informed decision before withdrawing from a course. Students with certain forms of scholarships who withdraw or are withdrawn from a class must pay the college for the cost of the class. Other scholarship sponsors may also require repayment.

ADDITIONAL CLASSROOM INFORMATION

Faculty/Student Communication: Valencia College is committed to providing each student a quality educational experience. Faculty members have set high standards of instruction for themselves and for you. If you have a problem in a class, your first step is to talk to your instructor. If you are still dissatisfied, you may talk with the academic dean of the division. We are committed to working together to resolve any issues that may arise.

Expected Student Conduct: By enrolling at Valencia College, the student assumes responsibility for becoming familiar with and abiding by the general rules of conduct. The primary responsibility for managing the online classroom environment rests with the faculty. Violation of any online classroom or Valencia rules may lead to disciplinary action up to and including expulsion from Valencia. Disciplinary action could include being withdrawn from class, disciplinary warning, probation, suspension, expulsion, or other appropriate and authorized actions. You will find the Student Code of Conduct in the current Valencia Student Handbook.

Academic Integrity: As healthcare professionals you are expected to adhere to and maintain the highest standards of academic integrity and professional and ethical conduct. Unless otherwise stated, all assignments, quizzes and exams are to be completed individually by each student enrolled. You may not communicate with other students during completion of a quiz or examination. You are expected to submit only your own original work and not cheat by giving answers to others or taking them from anyone else. According to the Random House Dictionary of the English Language, 2d ed., *“Plagiarism is the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one’s own original work”*. Working with other students on individual assignments, giving or receiving assistance during quizzes or exams is a form of academic dishonesty and will be considered cheating. Copying or printing of any quiz or test questions (for any purpose) is expressly prohibited and considered cheating.

NOTE: *Plagiarism and Cheating of any kind on an examination, quiz, or assignment will result in at least an "F" for that assignment (depending on the severity of the case, may lead to an "F" for the entire course) and may be subject to appropriate sanctions according to the Student Code of Conduct in the current Valencia Student Handbook.* [Valencia Policies](#)

Unicheck: All written assignments are subject to submission through plagiarism detection software. Unicheck is an automated system which instructors can use to compare each student’s papers and assignment quickly and easily with a wide variety of web sites. It is also an enormous database of student papers that grows with each submission. After the assignment is processed, the instructor receives a report from Unicheck that states if and how another author's work was used in the assignment. For a more detailed look at this process, visit: [Unicheck](#)

Online Rules of Student Behavior / Netiquette: The term "**netiquette**" refers to the awareness of the need for a certain code of behavior (etiquette) in electronic environments (the net) ... Net + Etiquette = netiquette. All students are expected to:

- Show respect for the instructor and for other students in the class
- Respect the privacy of other students
- Express differences of opinion in a polite and rational way
- Maintain an environment of constructive criticism when commenting on the work of other students
- Avoid bringing up irrelevant topics when involved in group discussions or other collaborative activities

Students should not:

- Show disrespect for the instructor or for other students in the class
- Send messages or comments that are threatening, harassing, or offensive
- Use inappropriate or offensive language
- Convey a hostile or confrontational tone when communicating or working collaboratively with other students
- USE ALL UPPERCASE IN THEIR MESSAGES -- THIS IS THE EQUIVALENT OF SHOUTING!!

If a faculty member feels that a student is violating any of the above guidelines, they will contact that student to discuss the situation in person. If you feel that another student is behaving inappropriately, please send your instructor a private e-mail message explaining the situation as soon as possible.

Valencia ID Cards: All students are required to obtain a Valencia ID card to access the campus and any student services that are provided. A valid Valencia ID is only form of identification that is accepted at the Library and Testing Center. After you have registered and paid for your fees, bring a photo ID to Student Development to obtain your Student ID card. Student ID's are free. If your ID is lost, there is a \$5 fee to replace it.

STUDENT HELP / SUPPORT SERVICES

Your success is very important to us! Students are encouraged to seek assistance from the instructor as needed. When additional support is needed, Valencia provides many student support resources including Computer Labs, Learning Centers, Student Success Workshops, Online Tutoring, Testing Center Support and Writing Consultations. For more information, go to: [Learning Support](#).

Baycare Behavioral Health's Student Assistance Program: Valencia is committed to making sure all our students have a rewarding and successful college experience and helps students in need of private counseling. To that purpose, Valencia students can get immediate help that may assist them with psychological issues dealing with stress, anxiety, depression, adjustment difficulties, substance abuse, time management as well as relationship problems dealing with school, home, or work. Students have 24-hour unlimited access to the BayCare Behavioral Health's confidential student assistance program phone counseling services by calling (800) 878-5470. Three free confidential face- to-face counseling sessions are also available to students.

Students with Disabilities: Students with disabilities who qualify for academic accommodations must provide a Notification to Instructor (NTI) form from the Office for Students with Disabilities (OSD) and discuss specific needs with the professor, preferably during the first two weeks of class; accommodations will not be applied retroactively. The Office for Students with Disabilities determines accommodations based on appropriate documentation of disabilities. The OSD is located on the West Campus SSB, Rm. 102 Phone: 407-582-1523 Fax: 407-582-1326.

Disclaimer: The course outline and syllabus are subject to change as needed; changes will be announced in Canvas and/or via ATLAS email, in a timely manner. Your continued participation in this course after the drop-add deadline period constitutes an agreement with and an acceptance of the conditions presented in this syllabus.