

**University of Florida
College of Public Health & Health Professions
Department of Physical Therapy**

**PHT 6381C Cardiopulmonary Disorders in Physical Therapy (3 credit hours)
2023**

Primary Instructor:

Dr. Shakeel Ahmed, PT, PhD
Clinical Assistant Professor
Office #1153
Office hours: Mondays 3:00 – 4:00 PM and by appt.
Office phone: 352-273-6105
Email : shakeel81@ufl.edu

Co Instructor:

Dr. William Meier, PT, DPT
Réhabilitation services
UF Health, Jacksonville
William.Meier@jax.ufl.edu

Teaching Assistant:

Luo, Yuting, MS
yutingluo@phhp.ufl.edu

Class location / Room Number: Mondays from 1:30 PM – 3:00 PM in CG 11
Thursdays from 2:30 PM – 4:00 PM at CLC

Preferred Course Communications: Email is the official communication at the University of Florida.

PURPOSE AND OUTCOME

Course Overview

Course Description:

This is primarily a lecture course designed to give students the knowledge and background to allow them to evaluate and treat patients with cardiopulmonary diseases as the primary diagnoses and patients being seen for other physical therapy diagnoses who have cardiopulmonary diseases. The course will cover elementary ECG interpretation, exercise testing, principles of cardiac rehabilitation, peripheral vascular disease and related cardiovascular diagnoses. The students will also be presented information on the processes for evaluating patients with pulmonary diseases, understanding how pulmonary disease affects exercise tolerance and designing effective rehabilitation programs for patients with primary pulmonary diagnoses. Other topics to be covered include critical illness-induced myopathy/weakness, mobilizing ventilator-dependent patients, the use of supplemental oxygen at rest and during exercise, ventilator-induced diaphragm dysfunction, and treatment. Laboratory experiences covering auscultation and measurement of respiratory muscle strength will be scheduled.

Relation to Program Outcomes

The goal of PHT6381C is to help develop clinical decision-making skills for the management of persons with primary and secondary cardiovascular and pulmonary pathology. We will review the underlying pathophysiology and clinical manifestations of cardiopulmonary disorders most encountered by physical therapists across various clinical settings and discuss their relevance to physical therapy evaluation and intervention. This course directly addresses the following standard required by the Commission on Accreditation in Physical Therapy Education (CAPTE).

***Standard 7C:** The physical therapist professional curriculum includes content and learning experiences about the cardiovascular, endocrine and metabolic, gastrointestinal, genital and reproductive, hematologic, hepatic and biliary, immune, integumentary, lymphatic, musculoskeletal, nervous, respiratory, and renal and urologic systems; system interactions; differential diagnosis; and the medical and surgical conditions across the lifespan commonly seen in physical therapy practice.*

Course Objectives:

Upon successful completion of this course, students should be able to:

1. Describe and understand the general pathophysiological basis for exercise limitations by patients with cardiopulmonary disease, including
 - a. Identification of the complex interaction of the cardiovascular and pulmonary system pathologies in various cardiopulmonary disorders.
 - b. Analysis of the multidimensional nature of dyspnea as a cause of exercise intolerance in such patients.
 - c. Identification of non-cardiopulmonary manifestations of pulmonary and cardiovascular diseases.
2. To understand the principles used to evaluate patients with cardiopulmonary disease and design effective and safe exercise rehabilitation programs, including
 - a. Analysis of signs and symptoms for prescription of appropriate physical therapy interventions or referral to other health care professionals when required.
 - b. Synthesizing relevant information from the patient's past and or current medical history.
 - c. Performing an objective examination of cardiovascular and pulmonary systems.
 - d. Identification and administration of appropriate tests to evaluate cardiopulmonary impairments in clients.
 - e. Interpretation of medical and imaging tests relevant to the client's cardiopulmonary impairments.
 - f. Forming individualized goals and evidence-based plan of care for clients.
 - g. Prescription of therapeutic exercise and interventions to relieve/prevent dyspnea, enhance bronchial hygiene (airway clearance), optimize mechanics of the chest wall and enhance exercise tolerance.
 - h. Identification of patient/client emergencies that warrant a change in the plan of care.
3. Communicate effectively with patients and colleagues on appropriate exercise prescription for patients with cardiopulmonary diseases, including
 - a. Display of verbal and non-verbal communication with instructors, peers, other health care providers, simulated patients and clients with cardiopulmonary impairments that is responsive to their individual needs and characteristics.

Instructional Methods

Lectures will be delivered in person and via zoom. Journal article readings, class discussions, laboratory practice, e-learning videos, and cases will be used to enhance learning. Master clinicians may participate as guest lecturers and or lab instructors. In lab sessions, cases will be presented and applied to the homework and lecture. Clinical problem-solving strategies will be applied and practiced.

Online Synchronous:

Our class sessions may be audio visually recorded for students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image

recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited

DESCRIPTION OF COURSE CONTENT: Topical Outline/Course Schedule

Week	Date	Topic	Quiz/Assignment	Pre class reading
1	8/24	Introduction to course, Examination of the respiratory system	Quiz 1(in class) #	
2	8/28	Respiratory examination lab: Group B	Quiz 2 (in class)	Review respiratory physiology from Fall 22
	8/31	Respiratory examination lab: Group A		
3	9/4	Holiday Arterial Blood Gas analyses (Asynchronous)		Content posted on canvas
	9/7	Pulmonary function tests and respiratory muscle strength evaluation		
4	9/11	Radiology of the thorax		
	9/14	Exercise Testing in Pulmonary Disease	Quiz 3 (in class)	
5	9/18	PT interventions for respiratory impairments 1	Case Report 1 due	
	9/21	PT interventions for respiratory impairments 2, O ₂ therapy		
6	9/25	PT interventions lab: Group A		
	9/28	PT interventions lab: Group B		
7	10/2	PT in obstructive lung diseases case studies		Pathophysiology of respiratory diseases from Spring 23
	10/5	PT in restrictive lung disease case studies	Quiz 4 (in class)	
8	10/9	Physical Therapy following lung surgery, Lung Transplant		
	10/12	Pediatric respiratory diseases (Dr Jessica Cornman, PT DPT, UF Shands) *	Case Report 2 due	
9	10/16	Exam 1		
	10/19	CV physiology and Examination of CVS	Quiz 5 (in class) #	Review CV physiology from Fall 22
10	10/23	EKG		
	10/26	EKG		
11	10/30	Exercise testing in CVD	Quiz 6 (in class)	
	11/2	Diagnostic procedures, and interventions for CAD, Valve replacements		Review pathophysiology
12	11/6	Cardiac Rehabilitation (post CAD)		
	11/9	Cardiac Rehab in CHF	Case Report 3 due	

13	11/13	Exercise prescription for patients on LVAD and ICD, Heart Transplant	Quiz 7 (in class)	of CV diseases from Spring 23
	11/16	ECMO and Cardiac Rehab case studies		
14	11/20	Congenital Heart Diseases (<i>Guest instructor: Dr Jessica Cornman</i>) *		
	11/23	Peripheral Arterial Diseases		
15	11/27	Cardiac Rehabilitation lab: Group B		
	11/30	Cardiac Rehabilitation lab: Group A	Quiz 8 (in class)	
16	12/4	Post COVID rehab	Case report 4 due	

NOTE: This is a tentative schedule, Exam 2 will be scheduled in Final's week.

Indicates in class open book quizzes.

All quizzes will be scheduled during the 1st ten minutes of class on their assigned dates.

Course Materials and Technology

Recommended Texts:

Course Textbook: Hillegass and Sandowsky. Essentials of cardiopulmonary physical therapy, Saunders. The textbook is an excellent resource but is optional. Lecture notes and other reading material will be available on Canvas.

Required Technology:

Several classes require access to online materials and examinations during class and/or laboratory. A laptop computer or tablet in good working order is essential for students in the DPT program. The clinical learning center is wired with AC power outlets near each seat, allowing students to take notes and exams on their devices without reliance on battery power. Exams will be administered in-class via electronic learning, and devices must be in good working order. If a laptop crashes during an exam, the student will be expected to continue the exam by handwriting.

Please check the **Canvas** e-learning system prior to attending class on Tuesday & Friday for lecture notes, homework and laboratory assignments, readings, announcements, grades, etc. The Canvas e-learning system can be accessed at the following link: <https://lss.at.ufl.edu>

For technical support for this class, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

ACADEMIC REQUIREMENTS AND GRADING

Exams:

There will be two multiple choice examinations. The exams **are not cumulative** in that material covered in the first exam will not be specifically included in the final, **however students will need to use information covered earlier in the course to answer questions on the final exam.** Exams will be administered in class via lockdown browser or other similar platforms. **You will have one week following the return of each exam to appeal your grade.** All grades must be appealed in writing via email.

Quizzes and assignments:

There will be 8 in class quizzes and 4 assignments (case reports) throughout the course.

Grading

Requirement	% of final grade
Quiz 1	1
Quiz 2	2
Quiz 3	3
Quiz 4	4
Quiz 5	1
Quiz 6	3
Quiz 7	3
Quiz 8	3
Case report 1	4
Case report 2	4
Case report 3	4
Case report 4	4
Exam #1 (50 MCQs)	30
Exam #2 (50 MCQs)	30
Professionalism & attendance	4

Points earned (%)	93-100	90-92	87-89	83-86	80-82	70-79	60-69	Below 60
Letter Grade	A	A-	B+	B	B-	C	D	E

Letter Grade	A	A-	B+	B	B-	C	D	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.0	1.0	0.0	0.0	0.0	0.0	0.0

Final points earned will not be rounded up. For greater detail on the meaning of letter grades and related University policies, see the Registrar's Grade Policy regulations at:

<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Policy Related to Make up Exams or Other Work:

Student physical therapists who miss a class because of an emergency or excused absence should speak with the instructors to complete missed exams or assignments and with fellow SPT's to obtain class notes/hand-outs or to gain information about lab activities.

Policy Related to Required Class Attendance

PHYSICAL THERAPY PROGRAM POLICIES FOR ALL COURSES

The DPT program is provided in a professional environment to foster the development of the professional-in-training. Every class and laboratory is important to facilitate development, and therefore attendance is expected for the scheduled didactic and clinical education experiences. The faculty recognizes that emergencies and appointments may arise, when the student cannot attend class.

In the event of an absence for any reason, the student will be held responsible for any content, clinical experiences, other learning experiences, quizzes, exams, competencies and/or practical exams. It is expected that the student will contact the specific instructor to determine if the opportunity exists to reschedule these obligations. Each instructor will address specifics for their course material and expectations for completion of course requirements in their course syllabus.

Policy Related to Class Attendance

Students are expected to attend lecture and labs. Missing class or lab without **prior** arrangements will result in point subtraction (1 point / lecture and 2 points/lab). Personal issues regarding attendance or fulfillment of course requirements will be handled on an individual basis.

No make-up classes or labs will be offered. Any lectures or labs that include a guest instructor will be mandatory, and tardiness or absenteeism for guest instructors may result in a professionalism warning. Students should inform the instructor of planned absences for guest instructors at least two days in advance. Per department policy, students must notify the department by phone (273-6085) in the event of an emergency or other unexpected absence.

Student Punctuality is important in both the clinic and classroom. SPTs are expected to arrive to class on time and to return from breaks on time. You are encouraged to notify your instructor(s) when appointments/unavoidable commitments will cause arrival after the starting time or require you to leave early. It is also the responsibility of the instructor to begin and end class at agreed upon times, and to notify you when changes of schedule will occur.

Expectations regarding course behavior

Class behavior: You are expected to:

- Be on time for class
- ***Stay until class is dismissed***
- Silence your cellular phone
- Be courteous by refraining from chatter and other distracting behaviors
- Do not look at external material during class (newspaper, Facebook, twitter, Instagram etc)

As students pursuing a path in the health professions or public health, it is crucial to demonstrate professional behaviors that reflect integrity and commitment to the health of patients, fellow health professionals, and the populations we serve. To accomplish this, a strong responsibility for the well-being of others must be evident in our decisions, along with accountability for our actions. Professionalism in the health disciplines requires adherence to high standards of conduct that begin long before graduation. This is particularly true during times of health emergencies such as the COVID pandemic, given our professional habits can have a direct impact upon the health of persons entrusted to us.

In response to COVID-19, the following guidelines are to maintain your learning environment and to enhance the safety of our in-classroom interactions and protect the community participants involved in community engagement and service learning.

Face coverings are recommended during class and within buildings. Please honor any requests from peers, faculty, staff, and members of the public for you to wear a mask when you are interacting with them. If someone

is wearing a mask, please ask if they prefer that you wear one too. Respect for the rights and dignity of individuals is the first principle of our professional code of ethics and a core value of the DPT program.

Face masks are recommended during labs as most of the skills learnt involve aerosol generating maneuvers.

If you are experiencing COVID-19 symptoms (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>), please stay home and use an at-home Covid test or make an appointment in the community for a Covid-19 PCR test: <https://floridahealthcovid19.gov/testing-sites/> If you are feeling acutely ill then please contact your physician or the Student Health Care Center (see “When to Seek Emergency Medical Attention” at <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>)

If you test negative for COVID-19 but are still not feeling well, then please remain out of class until your symptoms resolve and you feel well enough to attend. If you test positive for COVID-19, you can use the CDC Quarantine and Isolation calculator to determine your isolation period and receive guidance on masking: <https://www.cdc.gov/coronavirus/2019-ncov/your-health/quarantine-isolation.html>

It is recommended but not required that you take an at-home test on Day 6 of isolation to determine if you are still infectious. If that test is positive then you should stay home until the test is negative or through Day 10 of isolation, whichever comes first. Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work (<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>).

Recording lectures

“Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.”

Communication Guidelines

Please email the instructor directly (email address listed above) rather than using the E- learning. For digital communication expectations see: *Netiquette Guidelines*: <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

<http://gradschool.ufl.edu/students/introduction.html>

Unless specified otherwise in writing, all assignments, quizzes, and exams are to be completed independently. This means that collaboration with or assistance from any other person on assignments, quizzes or exams will be considered an Honor Code violation and referred to the Dean of Students office. The UF Honor Code specifies that it is the responsibility of the student to obtain clarification, if they have any questions about the nature of any assignment. Please do not hesitate to ask your instructors for guidance.

In this professional program we are particularly sensitive to students submitting independent work and to using complete and accurate referencing in complying with the University of Florida Rules – 6CI-4.017 Student Affairs: Academic Honesty Guidelines. Academic misconduct refers to dishonesty, knowingly furnishing false information to the University, plagiarism (e.g., presenting the ideas of someone else or the writing of someone else as one’s own work), or cheating of any kind. All exams, quizzes, and written assignments are to be completed independently by each student.

*Further details regarding UF’s honesty policy are available in the DPT Handbook, and on the Dean of Students’ website: <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Evaluations of PHT6381C are used to make improvements for future years. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

SUPPORT SERVICES

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, it is strongly recommended that you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to the course instructor to receive accommodations. Please make sure you provide this letter to me by the end of the second week of the course. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from the Alachua County Crisis Center at (352) 264-6789 or <http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

Inclusive Learning Environment

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu