

PT 540: CARDIOPULMONARY PHYSICAL THERAPY

Description: This course is designed to expand the theoretical understanding and clinical application of cardiopulmonary physical therapy examination, evaluation, diagnosis, prognosis, intervention and outcomes. Laboratory.

Department of Physical Therapy:

Faculty: Rachel Bothun, PT, DPT; David Relling, PT, PhD; Emily Henneman, PT, DPT, GCS

Credit Hours: 2 credit hours

Clock Hours:

Lecture: Tuesday 8-10 am

Lab: Thursday 8-10 am

Discussion: N/A

Course Objectives:

Upon completion of this course the student will be able to:

1. Describe normal and pathological aspects of cardiopulmonary anatomy and physiology.
2. Clinically apply cardiopulmonary anatomy and physiology to the physical therapy intervention of the client with primary or secondary cardiopulmonary impairments, functional limitations, and/or disabilities.
3. Demonstrate an understanding of purposes and precautions for client monitoring and support equipment including: mechanical ventilators, pulse oximetry, suction, intravenous lines, oxygen supplementation, and electrocardiographic (EKG) monitoring. Discuss appropriate physical therapy interventions for inappropriate patient/client responses during a physical therapy intervention.
4. Demonstrate an understanding of cardiopulmonary procedures through development of medically appropriate exercise prescriptions and instructions. These instructions must be in a format that is appropriate for the age, language, and social status of the client.
5. Demonstrate an understanding of pharmacological interventions for cardiopulmonary disorders including: type of medication, treatment effects, drug interactions, and side effects.
6. Perform a complete cardiopulmonary physical examination and recognize normal and abnormal signs and symptoms: observation, palpation, auscultation, heart & breath sounds, graded functional testing, percussion, peripheral circulation, ECG, chest mobility.

7. Understand the performance criteria for an entry-level physical therapist in the examination, evaluation, diagnosis, prognosis, and intervention of clients demonstrating impairment, functional limitations or disabilities related to a primary or secondary cardiopulmonary disease process.
8. Determine appropriate expected outcomes and prognoses of clients demonstrating impairment, functional limitations or disabilities related to a primary or secondary cardiopulmonary disease process.

Course Prerequisites:

Registered in Professional Physical Therapy curriculum.

Description of Teaching Methods and Learning Experiences:

Teaching methods in this course include lecture, practical, case scenario, and critical thinking relative to case scenarios and projects. The objectives contribute to the Practice Model Components of Patient Care: Screening\Evaluation\Progression\Discharge; Patient Care: Physical Therapy Intervention; Communications; and Education.

Outline of Content: See attached schedule.

Required and Recommended Texts/Readings:

Additional readings are highly recommended but are considered supplemental.

DeTurk WE & Cahalin LP. *Cardiovascular & Pulmonary Physical Therapy: An evidence based approach, 3rd Ed.* (D)

Jarvis C. *Pocket Companion for Physical Examination and Health Assessment 8th ed.* (P)

O'Sullivan SB & Schmitz TJ. *Physical Rehabilitation 6th Ed* (SS)

American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription 11th ed.* (G)

Methods of Evaluation:

Teaching methods in this course include lecture, practical, case scenario, and critical thinking relative to case scenarios and projects. The objectives contribute to the Practice Model Components of Patient Care: Screening\Evaluation\Progression\Discharge; Patient Care: Physical Therapy Intervention; Communications; and Education.

The written examinations will evaluate material, techniques, procedures and theory covered in lectures and laboratory sessions. The format of the exams may include, but are not limited to: multiple choice, true/false, multiple-multiple choice, matching, short answer, essay, and patient problems. Failure to achieve a passing score (80%) on a practical exam will result in retaking the exam one time to demonstrate competence in the content area. Failure to achieve a passing score on the re-take practical exam will result in review by the departmental scholastic standards committee and possible dismissal from the program. The initial score on all exams will be retained for overall course grading purposes. Midterm and Final examinations are considered Summative examinations. Summative examinations require scores of 76% or higher to be considered passing. Students scoring less than 76% MUST retake the summative examinations and demonstrate proficiency at 76% or higher. The initial score on all exams will be utilized for grading purposes.

Class attendance is expected 100% of the time. Students must notify the department by phone at 701.777.2831 or email ptoffice@und.edu of any absences. If an absence is anticipated, make up examinations should be completed *prior to* the absence. If an absence is unanticipated, ***make-up examinations must be made-up by the student within three days of the student's return to classes.*** If an absence occurs, missed assignments, quizzes, or projects may be made up based on faculty discretion.

GRADING:

Exam I	20%
Exam II	20%
Exam III/Final	25%
Practical Exam I	10%
Practical Exam II	10%
Projects/Assignments	10%
Attendance/Participation	5%

GRADES:

90-100%	A
80-89.9%	B
76-79.9%	C
<76%	Unsatisfactory

Academic Integrity:

In accordance with the rules concerning scholastic dishonesty in the Code of Student Life* at the University of North Dakota, I affirm that I understand these rules and I agree to comply with them.

I will not:

- receive any additional information or assistance for any exam other than what was provided during class or approved tutor sessions
- copy from another student's test
- collaborate with or seek aid from another student who may have previously taken the exam
- knowingly use, buy, sell, steal, or solicit in whole or in part the contents of any exam
- bribe another person to obtain information about any exam

DISABILITY ACCESS STATEMENT:

Contact me, David Relling (office 777-4091, email david.relling@und.edu , or visit Rm E-347 UND SMHS) to request disability accommodations, discuss medical information, or plan for an emergency evacuation. To get confidential guidance and support for disability accommodation requests, students are expected to register with DSS at UND.edu/disability-services, 180 McCannel Hall, or 701.777.3425.

COVID 19 STATEMENT:

In this course, students are expected to wear face coverings while in the classroom and/or laboratory. Students electing not to comply with these expectations will not be permitted to enter the room. UND strongly encourages all members of the University community, including

students, to get vaccinated and model positive behavior both on- and off-campus in order to foster a healthy and safe learning environment for all students. Individuals who would like to discuss disability accommodations regarding face coverings should contact the Disability Services for Students (DSS) office at 701-777-2664 or UND.dss@UND.edu. Individuals who are unable to wear a face covering due to a sincerely held religious belief should contact the UND Equal Opportunity and Title IX Office at 701.777.4171 or UND.affirmativeactionoffice@UND.edu.

All members of the University community have a role in creating and maintaining a COVID-19 resilient campus. There are several expectations from the School of Medicine and Health Sciences that require compliance, including: Wear face coverings during interactions with others and in the classroom; Wash hands often and use hand sanitizer; Properly clean spaces; and, if you are experiencing any symptoms, Stay home and call your health care provider. Students who fail to comply with any of the COVID related requirements will not be permitted in the classroom and may be subject to disciplinary action. We encourage all members of the University community to model positive behavior both on- and off-campus. Any changes in the SMHS COVID related requirements will be communicated to you through the Friday weekly email “For your health” from the Dean’s office and email from the program director or chair.

Students who test positive for COVID-19 are expected to immediately self-isolate/quarantine. If you have tested positive for COVID-19 we strongly recommend that you report the information to the Office of Student Rights and Responsibilities at 701.777.2664 or online at <https://veoci.com/veoci/p/w/ss2x4cq9238u>. Doing so will ensure students have the support they need to continue with their academic goals and to protect others. The policy related to COVID-19 may change throughout the semester due to community spread and updated CDC guidelines. Please check the policy frequently and ask faculty if you have any questions.

Notice of Nondiscrimination

It is the policy of the University of North Dakota that no person shall be discriminated against because of race, religion, age, color, gender, disability, national origin, creed, sexual orientation, gender identity, genetic information, marital status, veteran’s status, or political belief or affiliation and the equal opportunity and access to facilities shall be available to all. Concerns regarding Title IX, Title VI, Title VII, ADA, and Section 504 may be addressed to Donna Smith, Director of Equal Employment Opportunity/Affirmative Action and Title IX Coordinator, 401 Twamley Hall, 701.777.4171, und.affirmativeactionoffice@UND.edu or the Office for Civil Rights, U.S. Dept. of Education, 500 West Madison, Suite 1475, Chicago, IL 60611 or any other federal agency.

Reporting Sexual Violence

If you or a friend has experienced sexual violence, such as sexual assault, domestic violence, dating violence or stalking, or sex-based harassment, please contact UND’s Title IX Coordinator, Donna Smith, for assistance: 701.777.4171; donna.smith@UND.edu or go

to [UND.edu/affirmative-action/title-ix](https://und.edu/affirmative-action/title-ix).

Faculty Reporting Obligations Regarding Sexual Violence

It is important for students to understand that faculty are required to share with UND's Title IX Coordinator any incidents of sexual violence they become aware of, even if those incidents occurred in the past or are disclosed as part of a class assignment. This does not mean an investigation will occur if the student does not want that, but it does allow UND to provide resources to help the student continue to be successful at UND. If you have been the victim of sexual violence, you can find information about confidential support services at [UND.edu/affirmative-action/title-ix](https://und.edu/affirmative-action/title-ix).

UND CARES RESPONSE TEAM: The [UND Cares Response Team](#) is available to assist with incidents involving UND students 24 hours a day, seven days a week. They respond to incidents such as major accidents, missing students, sickness that interferes with attending classes, death, suicidal ideations, situations involving self-harm, psychological trauma and sexual violence. Contact directly at 701.777.2664 during regular business hours OR 701.777.3491 after hours.

If problems occur, students are required to work through channels of communication to resolve the problem before going to the chair or dean. The channel is student, instructor, chair, associate dean health sciences, and dean.(Last revised 8/2021)

PT 540: CARDIOPULMONARY PHYSICAL THERAPY

SCHEDULE OF CLASS CONTENT

LECTURE: T 8-10 am; LAB Thur 8 to 10 am

FACULTY: Rachel Bothun, PT, DPT; David Relling, PT, PhD; Emily Heneman, PT, DPT

Dave
Emily
Rachel

Date	Topic	Readings
24-Aug	Introduction to course; Pulmonary Anatomy, Physiology, Assessment	D: Ch 4 (Pulm) & 5
26-Aug	Pulmonary Assessment	D Ch 9
31-Aug	Pulm Pathophysiology, Assessment, Diagnosis, Pulmonary Assessment	D Ch 7; P Ch3,9,11; G Ch 2, 3 (pp58-61), 4
2-Sep	Pulmonary Assessment	D Ch 9
7-Sep	Pulmonary Assessment, Diagnosis, Testing	D Ch 9
9-Sep	Pulmonary Intervention	D 19, 20 & 21; G pp251-61
14-Sep	Pulmonary Intervention	D 19, 20 & 21; G pp251-61
16-Sep	Pulmonary Intervention	D 19, 20 & 21; G pp251-61
21-Sep	Pulmonary Intervention	D 19, 20 & 21; G pp251-61
23-Sep	Pulmonary Application SIM	D Ch 17
28-Sep	CV Anatomy, Physiology, Pathophysiology	D Ch 4 & 5
30-Sep	Pulmonary Practical Exam (7:30-10:00 am)	D Ch 17
5-Oct	Exam I--Pulmonary (Comprehensive)	
7-Oct	CV Anatomy, Physiology, Pathophysiology	D Ch 4 & 5
12-Oct	CV Examination & Evaluation	D Ch 10
14-Oct	Cardiac Examination	D Ch 10; P Ch 3,4,12,13
19-Oct	CV Examination & Evaluation	D Ch 10
21-Oct	Cardiac Examination	D Ch 10; P Ch 3,4,12,13
26-Oct	CV Examination & Evaluation	D Ch 10
28-Oct	Cardiac Examination	D Ch 10; P Ch 3,4,12,13
2-Nov	Exam II--CV Anat, Phys, Path, Exam, Eval	
4-Nov	EKG	D Ch 11; G: pp441-48
9-Nov	Cardiac SIM: CV Intervention for medical and surgical interventions	D Ch 18
11-Nov	HOLIDAY--Veteran's Day No Class	
16-Nov	Cardiovascular Practical Examination	
18-Nov	GXT, Exercise Prescription, CV Rehabilitation	G: Ch 4-10
23-Nov	GXT, Exercise Prescription, CV Rehabilitation	G: Ch 4-10
25-Nov	Thanksgiving Break	
30-Nov	Vascular, lymphedema & wounds	D Ch 22; P: Ch 13; SS Ch 14
2-Dec	Vascular, lymphedema & wounds	D Ch 22; P: Ch 13; SS Ch 14
7-10	FINALS WEEK	FINAL WRITTEN EXAM

REQUIRED TEXTS:

NOTE: All readings from DeTurk/Cahalin and Jarvis are considered required.

Additional readings are highly recommended but are considered supplemental.

DeTurk WE & Cahalin LP. *Cardiovascular & Pulmonary Physical Therapy 3rd ed (D)*

Jarvis C. *Pocket Companion for Physical Examination and Health Assessment 8th ed. (P)*

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