



Course Syllabus: Principles of Respiratory Therapeutics and Physics

College of Health Sciences and Human Services

RESP 3443 Section 101

Fall Semester, August 24, 2026 – December 11, 2026

Contact Information

Instructor: Jessica Fino, Ed.D, RRT

Office: Centennial Hall Rm 420 J

Office hours: By appointment.

Office phone: (940) 397-4584

E-mail: [Email for Jessica Fino](#)

Audience

Junior Respiratory Care Students

3 Credit Course

Weekly Meeting Pattern

Mondays: 10:30 am – 12:50 pm

Wednesdays: 10:30 am – 12:50 pm

Course Description

The focus of this lecture course is on the theoretical application of basic therapeutic techniques used by respiratory care professionals, grounded in the fundamental principles of physics as applied to the respiratory and cardiovascular systems. This course emphasizes the physics of fluids and gases underlying respiratory care practice. Physics topics include pressure, flow patterns, viscosity, gas laws, diffusion, surface tension, gas solubility, and arterial blood gas sampling. Therapeutic technique topics include airway care, lung expansion therapy, chest physical therapy, and patterns of cardiopulmonary dysfunction. Students will learn to apply physical principles to understand and optimize these therapeutic interventions for use in clinical practice.

Course Objectives

Course objectives include:

1. The student will be taught the techniques of lung expansion therapy to include: incentive spirometry, PEP devices, intermittent positive pressure breathing and continuous positive airway pressure

2. Bronchial hygiene maneuvers will be reviewed and students will be responsible for displaying knowledge of: manual and mechanical chest physiotherapy, airway clearance techniques to include cough and suctioning.
3. The airway management techniques requisite for respiratory care professionals will be presented and demonstrated. Students will demonstrate skill in: oral intubation, tracheostomy care, placement of nasal and oral simple airways.
4. Students will receive instruction in thoracic imaging techniques and can demonstrate competence in simple radiographic image interpretation and can demonstrate knowledge of standard practices relating to imaging commonly used with pulmonary patients.
5. The clinical condition of respiratory failure will be discussed. Students will demonstrate knowledge of the techniques for treatment and causes of respiratory failure.
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7. Describe how water vapor capacity, absolute humidity and relative humidity are related.
8. Describe how to predict gas behavior under changing conditions.
9. Describe the principles that govern the flow of fluids.
10. Apply concepts associated with monitoring and analysis to gas-analysis in the clinical setting.

Textbook & Instructional Materials

Egan's Fundamentals of Respiratory Care, 13th edition, ISBN 9780323931991
18 month Subscription to Classmate Learning Resources -

<https://www.classmatelr.com/acct/HomePage.aspx>

Student Handbook

Refer to: [Student Handbook 2026-27](#)

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct. Research papers and projects must be original work for each course

assignment. The faculty will not accept a submission that has been or is being submitted for another course. No Exceptions!

AI Statement

Since writing, analytical, and critical thinking skills are part of the learning outcomes of this course, all writing assignments should be prepared by the student. Developing strong competencies in this area will prepare you for a competitive workplace. Therefore, AI-generated submissions are not permitted and will be treated as plagiarism.

Assignment Grading

Assignments	Percentage of Total Grade
Supplemental Assignments	10%
Exams	65%
Final	25%

Grading Scale

Letter Grade	Percentage Grade
A	90-100%
B	80-89%
C	75-79%
D	70-74%
F	Less than 69%

A minimum grade of 75, or a C, is required in all respiratory courses. All assignments must be completed by 11:59pm on the due date.

Attendance

Regular class attendance is required. No distinction is made between excused and unexcused absences unless the absence has been cleared through the office of the Dean of Students, Athletic Department or Academic Affairs. If a student misses a lecture, it is the student's responsibility to work with other class members to determine what material was missed. Please refer to the MSU Student Handbook for more information or the Respiratory Care Student Conduct Guidelines for Clinical Laboratories.

Supplemental Assignments

Quizzes, homework assignments and projects will be assigned throughout the semester as needed to reinforce concepts introduced in the classroom. These assignments will be worth 10% of your overall grade.

Exams

The four unit exams will cover material discussed in class; the content will be derived from Egan's 13th ed. and the laboratory manual. Please refer to the Respiratory Student Handbook for more information regarding testing. The exams are worth 65% of your overall grade.

Final Exam

The final examination will be comprehensive of the entire course. The final exam is worth 25% of your overall grade.

Late or Missed Assignments

Anything not completed and handed in on time will be subject to a zero in the gradebook. No exceptions! Missed class days are not encouraged and students will be held accountable for all material covered during absences. Faculty members are not responsible for helping a student "make up" missed work. When possible arrangements should be made prior to the due date.

Important Dates

Last Day to drop with a grade of "W:" November 23, 2026

Refer to: [Drops, Withdrawals & Void](#)

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state)

exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

Services for Students With Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disabilities Office Link](#).

College Policies

Campus Carry Rules/Policies

Refer to: [Campus Carry Rules and Policies](#)

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Grade Appeal Process

Students who wish to appeal a grade should consult the Midwestern State University [Undergraduate Catalog](#)

Emergency Aid Resources for Basic Needs

Unexpected life circumstances can affect anyone. If you are experiencing challenges meeting basic needs—such as housing, utilities, food, transportation, healthcare, technology, textbooks or other life necessities, resources may be available to help. Visit the [Student Emergency Support and Resources webpage](#) to learn more, and explore emergency support opportunities through MSU and how to access them. For additional information, please contact the Office of

Student Affairs: Clark Student Center #108, (940) 397-7500,
student.affairs@mstuexas.edu.

Recording Classes

****Recording classes is generally prohibited without the professor's explicit permission.*** Such recordings, when permitted, are for personal use only and may not be uploaded to the internet or otherwise shared, transmitted, or published without the professor's prior consent. Some faculty may not permit recordings of their classes. When it is feasible and appropriate, students may record classes to accommodate disabilities under the Americans With Disabilities Act, with prior approval of Disability Support Services. Such recordings may not be uploaded to the internet or otherwise shared, transmitted, or published.

Schedule Changes

I will take every measure possible to adhere to the following course schedule. However, this schedule is subject to change. You will be notified via email and the course news in D2L if any changes are anticipated.

Course Schedule

Date	Classroom Assignments	Chapters
Aug. 24	Syllabus Review Lung Expansion	Chapter 43
Aug. 26	Lung Exp. Cont. Airway Clearance	Chapter 44
Aug. 31	Physical Principles/ Gas Behavior/Property of Gases	Chapter 6
Sept. 2	Exam #1	Ch 43-44
Sept. 7	No Class-Labor Day	
Sept. 9	Laboratory Data	Chapter 17
Sept 14	Exam #2	Chapter 6 & 17
Sept. 16	Chest Tubes/ Thoracic Imaging	Chapter 21
Sept. 21	Airway Management #1	Chapter 37
Sept. 23	Airway Management #2	Chapter 37
Oct. 26	Exam # 3	Ch 21 & 37
Oct 28	Analysis and Monitoring Oximetry	Chapter 19
Nov. 2	ABG WORKDAY	Chapter 19
Nov. 4	Respiratory Failure #1	Chapter 45
Nov. 23	Respiratory Failure #2	Chapter 45

Date	Classroom Assignments	Chapters
Nov. 25	Thanksgiving No Class	
Nov. 30	NIPPV/ High Flow Oxygen Therapy	Chapter 50
Dec. 2	Exam # 4	Chapter 19, 45, 50
Dec 7-10	Final Exams	