

**MIDWESTERN STATE UNIVERSITY
COLLEGE OF HEALTH SCIENCES AND HUMAN SERVICES
RESPIRATORY CARE PROGRAM
COURSE SYLLABUS**

COURSE TITLE

Pulmonary Diagnostics

COURSE NUMBER

RESP 4403

COURSE DESCRIPTION

This course is designed as an in-depth study of the standard testing methodologies employed to diagnose and monitor patients with cardiopulmonary disease. Emphasis is placed on the technical aspects as well as disease presentation. Topics include measurement and analysis of lung volumes, ventilation, pulmonary mechanics, gas distribution, diffusion testing, cardiac and pulmonary exercise testing, quality assurance, blood gas analysis and clinical assessment in the ICU.

WEEKLY MEETING PATTERN

Mon, Tues, Thurs 1pm-240pm Centennial 250

CREDITS

3 credits

COURSE INSTRUCTOR

Mary Sue Owen MS, RRT-NPS, ACCS, RPFT, AE-C
Office: 397-4654
Mary.owen@msutexas.edu

OFFICE HOURS

As posted, other hours by appointment Room 420F

AUDIENCE

Senior Respiratory Care Students

GRADED ITEMS AND GRADE DETERMINATION Lecture Exams

Standard exams that may include multiple choice, short answer, fill in the blank, essay or Case Studies, designed to cover material from the lecture and text.

Final Exam

Standard exams that may include multiple choice, short answer, fill in the blank, essay or Case Studies, designed to cover material from the lecture and text. I reserve the right to make this exam cumulative.

GRADE DETERMINATION

Lecture Examinations	70%
Final Examination	20%
Homework	10%

MISSED EXAM, LABORATORY REPORT OR OTHER GRADED ITEM POLICY

A 15% per day reduction in your grade will occur when an exam or graded item is not done on time, weekends and holidays included.

APPROXIMATE GRADING SCALE

>90%	A
80-89%	B
75-79%	C
61-74%	D
<60	F

****A minimum grade of 75 (C) is required in all respiratory courses. Failure to attain a minimum of a C will prevent the student from progressing in the program.**

ADA Compliance

In accordance with the law, MSU provides students with documented disabilities academic Accommodations. If you are a student with a disability, please contact me.

DISABILITY SUPPORT SERVICES
CLARK STUDENT CENTER, ROOM 168
PHONE: 397-4140

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.

OBJECTIVES

1. Students can differentiate between volume sensing and flow sensing spirometers, citing strengths and weaknesses of each design.
2. The student can explain the instrumentation required to perform basic spirometry, lung volume determination, and diffusion tests.
3. The student can list the indications for pulmonary diagnostic testing.
4. The student can identify expected changes in pulmonary diagnostic tests based on specific lung pathology.
5. When given a set of basic spirometric data, the student can identify normal and abnormal results.
6. The student can evaluate a lung volume study and determine whether the results indicate pulmonary obstruction or restriction.
7. The student will identify normal and abnormal diffusion study data and can explain challenges relative to the use of DLCO testing.
8. When evaluating arterial blood gas values, the student will correctly identify conditions relating to respiratory and metabolic dysfunction.
9. Students will evaluate exercise tests identifying anaerobic threshold, limitations to exercise based on de-conditioning, pulmonary and cardiac sources.
10. Students can list pulmonary diagnostic tests that help identify abnormal responses to increased carbon dioxide and decreased oxygen levels.
11. The student can identify common mistakes in quality assurance testing relating to pulmonary diagnostic equipment.
12. The student can identify the components of oxygen transport /clinical evaluation of oxygenation and their significance.
13. Recognize how the following can be used to evaluate tissue oxygen delivery and utilization: oxygen delivery, oxygen consumption, mixed venous oxygen tension, venous saturation, A/V content difference, O₂ ER and blood lactate.

LEARNING RESOURCES

REQUIRED TEXTS

Mottram, C.D. Manual of Pulmonary Function Testing, 12th Edition. Mosby, 2022.

LECTURE SCHEDULE

AUG. 24	1-240PM	INTRO/WELCOME/INDICATIONS (CHAP 1)
AUG. 25	1-240PM	INDICATIONS/BASIC PATHOLOGY (CHAP 1)
AUG 27	1-240PM	PFT EQUIPMENT (CHAP 11)
SEPT 28	1-240	SPIROMETRY AND RELATED TESTS (CHAP 2)
SEPT 29	1-240	SPIROMETRY AND RELATED TESTS (CHAP 2)
OCT 1	1-240	EXAM 1
OCT 5	1-240	LUNG VOLUMES (CHAP 4) / VENTILATION AND CONTROL TESTS (CHAP 5)
OCT 6	1-240	DIFFUSION CAPACITY (CHAP 3)
OCT 8	1-240	HOMEWORK AND REVIEW
OCT. 12	1-240	EXAM 2
OCT. 13	1-240	BLOOD GAS AND RELATED (CHAP 6)
OCT. 15	1-240	EXERCISE (CHAP 7)
OCT 19	1-240	EXERCISE CONT.
OCT 20	1-240	REVIEW
OCT 22	1-240	EXAM 3
NOV. 9	1-240	SPECIALIZED TESTS (CHAP 9 & 10)/QUALITY ASSURANCE (CHAP 12)
NOV. 10	1-240	ATS-ERS STANDARDS FOR PATIENT PERFORMANCE
NOV. 12	1-240	CONT. AND REVIEW
NOV. 16	1-240	EXAM 4
NOV. 17	1-240	GINA GUIDELINES
NOV. 19	1-240	GINA GUIDELINES
NOV. 23	1-240	GINA GUIDELINES
NOV. 24	1-240	GINA GUIDELINES
NOV. 30	1-240	GINA GUIDELINES

DEC 1	1-240	GINA GUIDELINES
DEC. 3	1-240	REVIEW FOR FINAL
DEC. 7	0900AM	FINAL EXAM