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%
Tophat	5%
Homework	5%

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
65-74%	D
<65	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

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.

Wilkins RL, Stoller James K, Kacmarek, Robert M, Egan's Fundamentals of Respiratory Care, 12th Edition, Mosby, 2021

LECTURE SCHEDULE

AUG. 26	1-240PM	INTRO/WELCOME/INDICATIONS (CHAP 1)
AUG. 27	1-240PM	INDICATIONS/BASIC PATHOLOGY (CHAP 1)
AUG 29	1-240PM	PFT EQUIPMENT (CHAP 11)
SEPT 30	1-240	SPIROMETRY AND RELATED TESTS (CHAP 2)
OCT 1	1-240	SPIROMETRY AND RELATED TESTS (CHAP 2)
OCT 3	1-240	**EXAM 1**
OCT 7	1-240	LUNG VOLUMES (CHAP 4)
OCT 8	1-240	LUNG VOLUMES (CHAP 4)
OCT 10	1-240	VENTILATION AND CONTROL TESTS (CHAP 5)

OCT. 14 1-240 DIFFUSION CAPACITY (CHAP 3)

OCT. 15 1-240 DIFFUSION CAPACITY CONT.

OCT. 17 1-240 CONT. AND REVIEW

OCT 21 1-240 **EXAM 2**

OCT 22 1-240 REVIEW EXAM

OCT 24 1-240 BLOOD GAS AND RELATED (CHAP 6)

NOV. 11 1-240 CONT

NOV. 12 1-240 EXERCISE (CHAP 7)

NOV. 14 1-240 EXERCISE CONT.

NOV. 18 1-240 FINISH AND REVIEW

NOV. 19 1-240 **EXAM 3**

NOV. 21 1-240 SPECIALIZED TESTS (CHAP 9 & 10)

NOV. 25 1-240 QUALITY ASSURANCE (CHAP 12)

NOV. 26 1-240 ATS-ERS STANDARDS FOR PATIENT PERFORMANCE

DEC 2 1-240 **EXAM 4**

DEC 3 1-240 **REVIEW FOR FINAL**

DEC. 5 **CASE STUDIES WITH DR. K**

DEC. 9 0900AM FINAL EXAM

Top Hat

We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. Additionally, we will be using the custom-built interactive material within Top Hat for this class. An email invitation will be sent to you by email closer to the first day of class, but if don't receive this email, you can register by simply visiting our course website: https://app.tophat.com/e/390114

Note: our Course Join Code is 390114. Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing .Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com),the in-app support button, or by calling 1-888-663-5491.