

COLLEGE OF HEALTH SCIENCES

RESPIRATORY CARE PROGRAM

COURSE SYLLABUS

COURSE TITLE

Respiratory Pharmacology

COURSE NUMBER

RESP 3523

COURSE DESCRIPTION

The focus of this lecture class is a comprehensive review of the major medications used to: promote bronchodilation and pulmonary hygiene, control airway inflammation, affect skeletal muscle tone and central nervous system activity, and support the failing cardiovascular system.

WEEKLY MEETING PATTERN

Monday/Wednesday 08:00-10:20 a.m. Centennial Hall 334

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.

COURSE INSTRUCTOR

Mary Sue Owen MS, RRT-NPS, RRT-ACCS, RPFT, AE-C

Office: 397-4654

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OFFICE HOURS

Office hours available by appointment.

AUDIENCE

Junior Respiratory Care Students

OBJECTIVES

1. Students can identify the principles of drug action
2. When presented with an order for aerosolized medication delivery the student can select the

- appropriate methodology for delivery of the medication.
3. Student can correctly calculate drug dosages based on commonly prescribed respiratory care medications.
 4. The student will correctly identify adrenergic bronchodilators and list mechanism of action, indications, side effects and hazards.
 5. The student will correctly identify anticholinergic medications and list mechanisms of action, indications, side effects and hazards.
 6. The student will correctly identify methylxanthine drugs and list mechanisms of action, indications, side effects and hazards.
 7. The student will explain the proper use of mucous controlling drugs, list mechanisms of action side effects and hazards.
 8. The student will explain the proper use of steroidal and non-steroidal drugs, list mechanisms of action side effects and hazards.
 9. The student will explain the proper use of anti-infective and anti-microbial drugs, list mechanisms of action side effects and hazards.
 10. The student will explain the proper use of skeletal muscle relaxants, list mechanisms of action side effects and hazards.
 11. The student will correctly identify cardio-vascular drugs, list mechanisms of action side effects and hazards.
 12. The student will correctly identify diuretic drugs, list mechanisms of action side effects and hazards.
 13. The student will correctly identify drugs affecting the central nervous system, list mechanisms of action side effects and hazards.
 14. Students can identify medications commonly used with patients suffering from asthma, COPD, pneumonia and congestive heart failure.

LEARNING RESOURCES

REQUIRED TEXTS

1. Rau, Joseph L., Jr. Respiratory Care Pharmacology, 11th Ed., Mosby 2024.

GRADED ITEMS AND GRADE DETERMINATION

Drug Card File

Each student will put together a 4x6 card file. The card file will be divided into the following sections;

Index card at the beginning, listing all categories and drug names

A. Sympathomimetic **Bronchodilators**

B. Parasympatholytic **Bronchodilators**

C. Xanthines

D. Mucus Controlling Agents

E. Surfactant Agents

F. Anti-inflammatory Agents

G. Anti-asthmatic Agents

H. Anti-infective Agents

I. Neuromuscular Blocking Agents

J. Sedatives and Hypnotics

K. Cardiovascular Agents

L. Diuretics.

Each section is to be clearly identifiable. Within each section place a card that contains the following information: Trade Name, Generic or Official Name, Mechanism of Action, Indications, and Precautions. Your name must be on each card: Use one card per drug. You must have at minimum 25 drug cards and **at least one for each section**. **In the very front you need to include an Index**. The index should list the drugs in each section. The Drug Card File is due by September 23rd, **2026**.

Case analysis in pharmacology

Each student will put together a portfolio of the following cases selected from clinical experience.

Asthma – COPD – Pneumonia - Congestive Heart Failure

The cases will be organized as follows:

- A. Patient data – Age, gender, diagnosis
- B. Medication list – list of all medications ordered on the patient
- C. Classification of medications – antibiotic, bronchodilator, etc.
- D. Indications – for each medication ordered
- E. Mode of action – for each medication ordered
- F. Possible side effects _ for each medication ordered

Each section is to be clearly identifiable for each case. Submit assignment with a cover sheet and neatly typed or word-processed. The assignment is due on or before **November 20, 2026**.

LECTURE EXAMINATIONS

There will be six in-depth lecture examinations. These examinations may consist of multiple choice, short answer, definitions, listing, true/false, and/or essay.

GRADE DETERMINATION

Lecture examinations (7)	60%
Drug card file	10%
Final Exam	20%
Case Analysis	10%

MISSED EXAM POLICY

If a student is going to miss an examination/assignment, it is the student's responsibility to contact the instructor prior to the exam to arrange with the instructor to make up the missed exam. A 15% reduction will be taken for each day after the scheduled exam/due date. The professor reserves the right to make unscheduled exams essay in nature and considerably more challenging.

APPROXIMATE GRADING SCALE

90-100%	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.**

CONCEALED CARRY LAW

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage at **[campus carry policies](#)**.

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.

LECTURE AND EXAM SCHEDULE 2026

DATE	TOPIC	TEXT ASSIGNMENT
Aug. 24	Orientation and Intro /principles of drug action	Chapters 1, 2, 3
Aug. 26	Administration/Calculating Drug Dosages	Chapter 3 & 4
Aug. 31	Exam 1/ Nervous System/adrenergic bronchodilators	Chapter 5 & 6
Sept. 2	Anticholinergics/Xanthines Mucus controlling drug therapy	Chap 7,8, &9
Sept. 7	LABOR DAY	
Sept. 9	Exam 2	
Sept. 14	Surfactant agents, Corticosteroids Nonsteroidal antiasthma agents/biologics	Chapter 10, 11,12
Sept 16	Exam 3	
Sept 21	Aerosolized anti-infective, antimicrobials Work on Drug cards	Chapter 13 & 14
Sept 23	Exam 4 Drug cards due	
Oct. 26	Cough and Cold Agents/ Agents of Pulmonary Value Neonatal/Pedi Aerosolized drugs	Chapter 15,16, &17
Oct 28	Exam 5	
Nov. 2	Skeletal Muscle Relaxants/Diuretics/Drugs Affecting CNS	Chapter 18,19, &20
Nov 4	Exam 6	
Nov 23	Cardiac Drugs	Chapter 21
Nov 30	Circulation Case Analysis Due Nov. 30	Chapter 22

Dec 2

Exam 7/Final Review

Dec 10

Finals 09:00