RESP-160: RESPIRATORY CARE PHARMACOLOGY

Effective Term
Fall 2026

CC Approval
12/05/2025

AS Approval
12/11/2025

BOT Approval
12/18/2025

SECTION A - Course Data Elements

CB04 Credit Status
Credit - Degree Applicable

Discipline

Minimum Qualifications	And/Or
Respiratory Technologies (Any Degree and Professional Experience)	

Subject Code
RESP - Respiratory Care
Course Number
160

Department
Respiratory Therapy

Division
Health Occupations (HEOC)

Full Course Title
Respiratory Care Pharmacology

Short Title
Respiratory Care Pharmacology

CB03 TOP Code
1210.00 - *Respiratory Care/Therapy

CIP Code
51.0908

CB08 Basic Skills Status
NBS - Not Basic Skills

CB09 SAM Code
C - Clearly Occupational

Rationale
Course reviewed and updated.

SECTION B - Course Description

Catalog Course Description
Students will receive instruction in the pharmacology of respiratory care. The course will cover medication calculations, inhaled bronchodilators, steroids and aerosolized antimicrobials.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit
No

Repeatability
Not Repeatable

Grading Options
Letter Grade Only

Allow Audit
Yes

Requisites

Prerequisite(s)
Completion of RESP-130 with a minimum grade of C.

Requisite Justification

Requisite Description
Course Not in a Sequence

Subject
RESP

Course #
130

Level of Scrutiny
Content Review

Upon entering this course, students should be able to:

1. Apply proper techniques in basic patient assessment.
2. Describe the proper storage, transport, and maintenance of medical gas systems.
3. Demonstrate the proper delivery of therapeutic gases.
4. Discuss the indications and hazards associated with oxygen administration.
5. Compare and contrast humidity and aerosol therapy.
6. Apply humidity and aerosol therapy using acceptable techniques.

SECTION D - Course Standards

Is this course variable unit?
No

Units
3.00

Lecture Hours
54.00

Outside of Class Hours
108

Total Contact Hours
54

Total Student Hours
162

Distance Education Approval

Is this course offered through Distance Education?
No

SECTION E - Course Content

Student Learning Outcomes

	Upon satisfactory completion of the course, students will be able to:
1.	Compare and contrast medications used for asthma.
2.	Accurately calculate medication dosages.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1.	Calculate dosages of medications.
2.	Categorize aerosol delivery equipment and techniques.
3.	Explain the mechanism of action, indications, and hazards of the sympathomimetic bronchodilators.
4.	Discuss the recommended use for the parasympatholytic bronchodilators.
5.	Discuss the reason why the methylxanthines bronchodilators are rarely used for asthma.
6.	Compare and contrast the two FDA-approved mucus controlling agents.
7.	Describe the uses and hazards associated with administration of corticosteroids.
8.	Compare and contrast the surfactant replacement agents used in neonatal care.
9.	Explain the indications, mechanism of action, and hazards associated with the administration of antimicrobials.

Course Content

1. Drug Calculations
2. Aerosol Delivery Devices
3. Review of the Nervous System
4. Sympathomimetic bronchodilators
5. Parasympatholytic bronchodilators
6. Methylxanthines bronchodilators
7. Mucus controlling agents
8. Surfactant replacement agents
9. Corticosteroids
10. Nonsteroidal anti-inflammatory agents
11. Aerosolized Anti-microbial drugs

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Activity	Students collaborate to solve simulated patient problems.
Lecture	Instructor relays information on a given subject.

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Exams/Tests	Final Exam - Final exam, to include both multiple choice and essay questions. Mid Term - (to include both multiple choice and essay questions). Examples of midterm questions are: 1. Racemic epinephrine would be the drug of choice for a child admitted to the hospital with: a. Asthma, b. A congenital heart defect, c. Croup, d. Pneumoniae, Diarrhea and vomiting. 2. Explain how the Nucleotide producing the opposite effect of cAMP causes bronchoconstriction?
Quizzes	Examples of quiz questions would be: 1. If albuterol is a 0.5% solution, how many milliliters will you give for a 2.5 milligram dose? 2. Long-term desensitization of beta receptors to 2 agonists, is caused by a reduction in the number of _____ .
Homework	An example of homework assignments would be the following: 1. Discuss the proposed theories of activity for xanthines. 2. Describe the medications approved for the therapy of mucus clearance disorders and their approved indications.
Other	Completion of all work at 77% = C grade as required and approved by the Respiratory Care Board and Committee on Accreditation for Respiratory Care (CoARC).

Assignments

Reading Assignments

1. Read chapter four in Respiratory Care Pharmacology on Calculating Drug Doses and answer the self-assessment questions at the end of the chapter.
2. Read the article New Treatments for Status Asthmaticus and discuss the conclusions with your group.

Writing Assignments

Examples of writing assignments are:

1. List five commonly used antimycobacterial and include the mechanisms of action of antibacterials.
2. List all available exogenous surfactant agents used in respiratory therapy and explain the clinical application of each.

SECTION F - Textbooks and Instructional Materials

Material Type

Textbook

Author

Gardenhire, Douglas S.

Title

Rau's Respiratory Care Pharmacology

Edition/Version

11th

Publisher

Mosby

Year
2023

Material Type
Other required materials/supplies

Description
5 X 8 Index cards

SECTION G - Diversity, Equity and Inclusivity

How does your course and/or course outline of record reflect strategies for accommodating and engaging diverse student populations, advancing equitable outcomes, and fostering inclusion for all students?
The course outline of record reflects inclusive practices by detailing flexible instruction, diverse course materials, equitable assessments, and supportive policies that ensure accessibility and engagement for all students.

Course Codes (Admin Only)

CB00 State ID
CCC000285113

CB10 Cooperative Work Experience Status
N - Is Not Part of a Cooperative Work Experience Education Program

CB11 Course Classification Status
Y - Credit Course

CB13 Special Class Status
N - The Course is Not an Approved Special Class

CB23 Funding Agency Category
Y - Not Applicable (Funding Not Used)

CB24 Program Course Status
Program Applicable

Allow Pass/No Pass
No

Only Pass/No Pass
No