RESP 116-CARDIOPULMONARY PHARMACOLOGY 3 CREDITS

SYLLABUS

CATALOG DESCRIPTION

This course presents major pharmacological agents used in treating cardio-pulmonary diseases. It provides a discussion of pharmaceutical classification, drug action and modes of administration, the metric system, medications and special handling procedures. Also included are cardiac drugs, sedatives, and pain maintenance drugs as they relate to cardio-pulmonary function.

Prerequisites: RESP 110, 112, 114, 118, 236

Co-Requisites: RESP 120, 126, 128

Semester Offered: Spring Semester

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in…

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

GENERAL LEARNING OBJECTIVES

Upon successful completion of the course, the student will be able to:

1. Define pharmacology and describe the prescription and the process of drug approval in the U.S.
2. Discuss pharmacokinetics, pharmacodynamics, drug indications and dosage.
3. Define the terms- toxicity, side effects, allergic reactions, and other drug terminologies.
4. Discuss the pharmacology of the respiratory system.
5. Compare routes of drug administration.
6. Compare the 3 classes of bronchodilators- B-agonists, anticholinergics and methylxanthines.

7. Describe/demonstrate various aerosol delivery devices.
8. Compare the 4 classes of anti-inflammatory drugs.
9. Describe the action of secretions modifier, surfactant therapy and inhaled anti-microbial drugs.
10. Describe the actions of anticoagulants, diuretics, vasopressors, inotropic agents, vasodilators, opiates, sedatives, and neuromuscular blockers.

SPECIFIC LEARNING OBJECTIVES

Upon successful completion of the course, the student will be able to:

1. Define pharmacology and describe the prescription and the process of drug approval in the U.S:
   A. Define pharmacology.
   B. Identify the parts of a drug prescription.
   C. List the steps or process of drug approval.

2. Discuss pharmacokinetics, pharmacodynamics, drug names, sources, dosage and drug calculations:
   A. Discuss drug absorption, distribution, metabolism, elimination, and half-life.
   B. Explain receptor types, receptor kinetics, potency and efficacy.
   C. Identify the drug reference books.
   D. Identify how drugs are named (generic and trade names) and the source of drugs.
   E. Explain drug indications and dosage.
   F. Calculate drug doses used in respiratory care.

3. Define the terms- toxicity, side effects, allergic reactions, and other drug terminologies:
   A. Therapeutic index
   B. Synergism
   C. Agonist
   D. Antagonist
   E. Additivity
   F. Potentiation
   G. Idiosyncratic
   H. Tolerance
   I. Hypersensitivity
   J. Tachyphylaxis

4. Discuss the pharmacology of the respiratory system:
   A. Review and explain the two branches of the autonomic nervous systems to include :
      a. sympathetic — adrenergic receptors and their function
      b. parasympathetic — cholinergic receptors and their function
   B. Identify the mediators of inflammation
   C. Identify the mediators of bronchial smooth muscle flow
   D. Identify the mediators of bronchial secretions
   E. Explain the receptor physiology

5. Compare routes of drug administration
   A. Inhalation
   B. Oral route
   C. Intravenous and intramuscular
   D. Subcutaneous
   E. Intratracheal

6. Compare the 3 classes of bronchodilators- Adrenergics, anticholinergics and methylxanthines
   A. Adrenergic (sympathomimetic) bronchodilators
   B. Anticholinergic (parasympatholytic) bronchodilators
   C. Xanthines

7. Describe/demonstrate various aerosol delivery devices:
   A. Small volume nebulizer
   B. Metered dose inhaler (MDI) with and without spacer
   C. Dry powder inhalers (DPI)

8. Compare the 4 classes of anti-inflammatory drugs
   A. Adrenocorticosteroids and Inhaled corticosteroids
   B. Non-steroidal anti-inflammatory drugs (NSAIDs)
   C. Leukotriene inhibitors
   D. Cromolyn

9. Describe the action of secretions modifier, surfactant therapy and inhaled anti-microbial drugs
   A. Describe the actions of drugs that modify airway secretions.
   B. Discuss the role of surfactant therapy in neonatal respiratory distress syndrome.
   C. Discuss the role of anti-microbial agents for patients with respiratory disease.

10. Describe the actions of drugs used in cardiopulmonary diseases:
    A. Skeletal muscle relaxants (neuromuscular blocking agents)
    B. Cardiac drugs
    C. Drugs affecting circulation
    D. Diuretic agents
    E. Drugs affecting the central nervous system

ASSESSMENT TECHNIQUES

1. Quizzes
2. Homework/project
3. Mid-term Exam
4. Final Exam

ACCOMMODATIONS STATEMENT

Students who need accommodations (i.e., notetaker, interpreter, special seating, etc.) need to provide accommodation notices to the instructor. Students can contact the Students with Disabilities on Campus (SDOC) Coordinator in the Counseling Center, located in the Administration Building, to make arrangements and provide documentation in accordance with the Americans with Disabilities Act of 1990.

ACADEMIC HONESTY RULES

San Juan College expects all students to adhere to the Academic Honesty Rules as posted on our website, http://www.sanjuancollege.edu/academichonesty. All Health Sciences Programs have a responsibility to

ensure enrolled students and graduates are safe, ethical and competent practitioners. To ensure professionalism, students and faculty must uphold and abide by college and program accreditation specific policies.

SYLLABUS DEVELOPED AND/OR REVIEWED BY:

Dean of Health Sciences: _____ Date: _____

Director of Respiratory Therapy: _____ Date: _____

Clinical Coordinator of RT: _____ Date: _____