

**MACOMB COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES**

COURSE SYLLABUS

- I. **DEPARTMENT/DISCIPLINE:** Health and Human Services/Respiratory Therapy
- II. **COURSE TITLE:** Cardiopulmonary Pharmacology
- III. **CATALOG DESCRIPTION:** This course is designed to teach aerosol delivery of respiratory medications that are specifically delivered by respiratory care practitioners. An in-depth study of the autonomic nervous system will be covered to explain the mechanism of drug actions. The student will learn indications, modes of delivery dosages and adverse reactions of respiratory medications. The student also will be introduced to critical care pharmacology. Spring Semester only. (3 contact hours per week for the first eight weeks). Center Campus
- IV. **PREREQUISITES:** RSPT 1050, 1060, 1080, 1090
COREQUISITES: RSPT 1111, 1120, 1140
- V. **COURSE NUMBER:** RSPT 1200
- VI. **SEMESTER CREDIT HOURS:** 1.5 **CONTACT HOURS** 3 hours/week
- VII. **EFFECTIVE TERM:** Winter 2007
- VIII. **STUDENT ACADEMIC OUTCOMES:** Upon completion of the course, the student will:
- A. Identify and describe the generic and trade names, routes of administration, dosages, mechanism of action and adverse reactions of all respiratory medication (Respiratory Medication Packet).
 - 1. Given a respiratory medication, state the generic and trade names.
 - 2. Given a respiratory medication, state its most common routes of administration and the dosage associated with that route.
 - 3. Given a respiratory medication, state the mechanism of action.
 - 4. Given a respiratory medication, state the hazards, complications, and adverse reactions associated with that medication.
 - B. Identify and describe the generic and trade names, routes of administration, mechanism of action and adverse reactions to all critical care medications (Advanced Critical Care Medication Packet).
 - 1. Given a critical care medication, state the generic and trade names.
 - 2. Given a critical care medication, state its most common routes of administration and the dosage associated with that route.
 - 3. Given a critical care medication, state the mechanism of action.
 - 4. Given a critical care medication, state the hazards, complications, and adverse reactions associated with that medication.
 - C. Develop an in-depth knowledge of the autonomic nervous system and be able to apply this knowledge in describing the action of respiratory and critical care medications.
 - 1. Describe the function of the neural junction.
 - 2. Compare and contrast the sympathetic and parasympathetic nervous system.
 - 3. Compare and contrast adrenergic and cholinergic receptors.
 - 4. Differentiate between the different methods of bronchodilation.

- D. Interpret and evaluate a medication order, perform drug calculations and safely administer aerosol therapy.
 - 1. List the components of a proper medication order.
 - 2. Compare and contrast different methods of aerosol delivery.
 - 3. Given appropriate information, derive drug dosage calculations.
- E. Recognize adverse reactions to medications and take appropriate actions.
 - 1. Explain the procedure you would follow in the event of an adverse reaction.
 - 2. Describe how a respiratory care practitioner can decrease the incidence of oral fungal infections when administering aerosolized steroids.
- F. Apply and evaluate assessment data and respiratory physiology to determine the appropriate drug therapy and treatment protocol.
 - 1. List those agents used as an aid to smoking cessation for the relief of nicotine withdrawal.
 - 2. Describe how a treatment protocol can be used to titrate medication delivery for an asthmatic patient.

IX. COURSE ASSESSMENT

- A. Comprehensive final exam in comparison to representative pre-course test.

X. COURSE CONTENT OUTLINE

- A. General Pharmacologic Principles
 - 1. Generic and Trade Names
 - 2. Classification
 - 3. Indications
 - 4. Actions
 - 5. Adverse Reactions
 - 6. Contraindications
 - 7. Dosages
- B. Drug Dosing
 - 1. Solute
 - 2. Solvent
 - 3. Solution
 - 4. Percent of Solution
 - 5. Mass of Drug
 - 6. Volume of Drug
 - 7. Neuroreceptors
- C. Bronchodilators
 - 1. Mechanism of Action
 - 2. Sympathomimetics
 - 3. Anti-Cholinergics
 - 4. Xanthines
- D. Aerosol Delivery
 - 1. Small Volume Nebulizers
 - 2. Continuous Aerosol Therapy
 - 3. Metered Dose Inhalers
 - 4. Dry Powdered Inhalers
 - 5. Small Particle Aerosol Generators
- E. Mucolytics
- F. Anti-Inflammatory Agents
 - 1. Mast Cell Stabilizers
 - 2. Leukotriene Antagonists
 - 3. Corticosteroids
- G. Anti-Infective Agents
- H. Surface Active Agents
- I. Anesthetic Agents
- J. Nicotine Replacement Therapy
- K. Cardiovascular Agents
- L. Neuromuscular Blocking Agents