

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

**COURSE SYLLABUS**

- I. **DEPARTMENT/DISCIPLINE:** Health and Human Services - Respiratory Therapy
- II. **COURSE TITLE:** NEONATAL/PEDIATRIC RESPIRATORY CARE
- III. **CATALOG DESCRIPTION:** This eight-week course will introduce the student to neonatal and pediatric respiratory care. The course covers fetal lung development, anatomy and physiology, neonatal development, pathology, CPR, acid base monitoring and introduction to mechanical ventilation of the newborn. Spring semester only. (3 contact hours per week for the second eight weeks) Center Campus
- IV. **PREREQUISITES:** RSP 1050, 1060, 1080, 1090, and 1200  
**COREQUISITES:** RSP 1111, 1120, and 1140
- V. **COURSE NUMBER:** RSPT 1210
- VI. **CREDIT HOURS:** 1.5 credit hours  
**CONTACT HOURS:** 3 hours/week: Lecture
- VII. **EFFECTIVE TERM:** Winter 2007
- VIII. **STUDENT ACADEMIC OUTCOMES: Upon completion of the course, the student will:**
- A. Develop an understanding of the changes in anatomy and physiology of the cardiopulmonary system that occur from conception through the early neonatal period.
    - 1. The student will be able to differentiate the phases of prenatal cardiopulmonary development. MODULE A
    - 2. The student will be able to differentiate between the different phases of labor and delivery.
    - 3. Identify and describe the factors that cause changes in cardiopulmonary anatomy and physiology during the first minutes of post-uterine life.
  - B. Develop an understanding of the cardiopulmonary pathologies that exist in the infant and child.
    - 1. Given a neonatal respiratory disorder, the student will be able to describe the pathophysiologic alterations present.
    - 2. Given a neonatal cardiac defect, the student will be able to describe the pathophysiologic alterations present.
    - 3. Given a neonatal respiratory disorder, the student will be able to describe the therapeutic interventions used to treat the disorder.
    - 4. Given a neonatal cardiac defect, the student will be able to describe the therapeutic interventions used to treat the disorder.

- C. Utilize information gathered from laboratory, diagnostic testing and patient assessment to evaluate respiratory and cardiac function.
  - 1. The student will be able to differentiate between the various methods of assessing cardiovascular status during the perinatal period. MODULE B1
  - 2. Given a clinical scenario, convert the baby's weight to the desired units, calculate the baby's Apgar score, and suggest appropriate interventions based upon the measured score.
- D. Apply pharmacological agents to the treatment protocol of infants and children with respiratory and cardiac disorders.
  - 1. Given a respiratory medication, state the indication, contraindication, dosage, mechanism of action and adverse reactions associated with its use.
  - 2. Describe how a respiratory care protocol can be used to manage a patient with cardiopulmonary disease in the neonatal or pediatric period.
- E. Analyze and evaluate respiratory treatment with the use of invasive and non-invasive monitoring.
  - 1. State the indication for an umbilical arterial line and describe the technique for placement.
  - 2. Differentiate between the various methods available to control arterial blood-gas values.
- F. Apply airway management and resuscitative techniques and protocols from the American Heart Association, Pediatric Advanced Life Support (PALS) guidelines and evaluate patient response.
  - 1. Given a clinical scenario where a neonate/infant/child needs to be intubated, select the correct equipment and describe the technique required to successfully intubate the patient and manage the airway.
  - 2. Describe the technique associated with cardiopulmonary resuscitation in the infant.
  - 3. Describe the technique associated with cardiopulmonary resuscitation in the child.

## **IX. COURSE ASSESSMENT**

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

## **X. COURSE CONTENT OUTLINE**

- A. Embryonic Development
- B. Assessment of Fetal Growth
- C. Assessment of Labor and Delivery
- D. Post-Delivery Stabilization and Recovery
- E. Assessment of the Newborn
- F. Thermal Regulation
- G. Mechanical Ventilation
- H. Neonatal Diseases
- I. Congenital Heart Diseases
- J. Pediatric Diseases.