DATE OF LAST REVIEW: 02/2013

CIP CODE: 51.0908

SEMESTER: Departmental Syllabus

COURSE TITLE: Cardiopulmonary Care & Diagnostics II

COURSE NUMBER: RSCR0245

CREDIT HOURS: 4

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

TELEPHONE: Departmental Syllabus

PREREQUISITES: Admission to the Respiratory Therapy Program, Program Sequence

REQUIRED TEXT AND MATERIALS:
Please check with the KCKCC bookstore, http://www.kckccbooksotre.com/, for the required texts for your particular class

COURSE DESCRIPTION:
In this applications oriented class, students put lecture content and lab competencies to use on clinical rounds. Students become familiar with cardiopulmonary diseases and diagnostic symptoms. Bedside testing, patient monitoring, and pharmacologic interventions are key components of this course.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, learning experiences, and performances outside the classroom. Methodology will be selected to best meet student needs.

REQUIREMENTS FOR THE COURSE:
All weekly assignments are to be read and/or completed for the class sessions in which they are scheduled. Students are responsible for reading assignments and attending scheduled classes in order to be prepared to; participate in discussions, successfully complete quizzes and exams, and complete in-class activities and projects.

Written examinations may contain multiple-choice, true-false, matching, fill in the blank and/or short answer questions. They will be based mainly on lecture and text content. A course grade of C or better is required to fulfill Respiratory Therapy Program requirements.
COURSE OUTLINE:

I. Respiratory Tests to Identify Lung Problems
   A. pulmonary mechanics
   B. flow rates
   C. lung volumes
   D. lung capacities
   E. lung diffusion
   F. airway pressures

II. Differentiating Types and Severity of Cardiopulmonary Conditions
   A. asthma
   B. bronchitis
   C. emphysema
   D. combined airway defects
   E. respiratory insufficiency
   F. deconditioning
   G. obstructed airway
   H. pneumonia
   I. hypersecretion
   J. mucus plugging
   K. pulmonary edema
   L. congestive heart failure
   M. airway trauma
   N. tracheal deviation
   O. thoracic deviation
   P. shunt
   Q. deadspace
   R. acute lung injury
   S. acute respiratory distress syndrome
   T. respiratory failure

III. Cardiopulmonary Measurements and Monitoring
   A. arterial blood gases
      a. PA02
      b. PAC02
      c. PH
      d. HC03
   B. buffering mechanisms
   C. hemoximetry
   D. transutaneous monitoring
   E. capnography
   F. chest x-rays
   G. MRI
   H. CT
   I. microbiology lab values
   J. white blood cells
   K. hemoglobin
   L. hematocrit
   M. electrolytes
N. coagulation studies
O. theophylline
P. electrocardiograms
Q. complete blood counts
R. enzymes
S. P/F ratio
T. a/A ratio
U. V$_D$/V$_T$ ratio

EXPECTED LEARNER OUTCOMES:

A. The student will be able to discuss clinical tests used to identify cardiopulmonary problems.
B. The student will be able to determine severity of cardiopulmonary problems.
C. The student will be able to determine the appropriateness of respiratory care plans and recommend modifications when indicated by data.

COURSE COMPETENCIES:

The student will be able to discuss clinical tests used to identify cardiopulmonary problems.
1. The student will be able to define respiratory tests used to measure lung function.
2. The student will be able to recommend and interpret blood gas values sampled from capillaries and arteries, and indwelling catheters.
3. The student will be able to recommend and interpret cooximetry values.
4. The student will be able to recommend and interpret electrolyte values.
5. The student will be able to interpret acid-base values.
6. The student will be able to interpret red blood cell count values.
7. The student will be able to interpret white blood cell count values.
8. The student will be able to interpret lymphocyte values.
9. The student will be able to interpret neutrophil values.
10. The student will be able to interpret basophil values.
11. The student will be able to interpret eosinophil values.
12. The student will be able to recommend and interpret hemoglobin values.
13. The student will be able to interpret hematocrit values.
14. The student will be able to interpret carboxyhemoglobin values.
15. The student will be able to interpret oxyhemoglobin values.
16. The student will be able to interpret methemoglobin values.
17. The student will be able to interpret sodium values and recommend adjustments.
18. The student will be able to interpret potassium values and recommend adjustments.
19. The student will be able to interpret chloride values and recommend adjustments.
20. The student will be able to interpret anion gap values.
21. The student will be able to interpret coagulation studies.
22. The student will be able to interpret microbiology lab values.
23. The student will be able to recommend and evaluate chest radiography.
24. The student will be able to recommend and interpret MRI results.
25. The student will be able to recommend and interpret CT results.
26. The student will be able to recommend and interpret pulmonary function tests; e.g., spirometry, lung volumes, compliance and resistance, DLCO, exercise, bronchoprovocation studies.
27. The student will be able to recommend and interpret electrocardiograms.
28. The student will be able to identify life threatening electrocardiograms.
29. The student will be able to interpret exhaled nitric oxide values.
The student will be able to determine severity of cardiopulmonary problems.

30. The student will be able to evaluate data to determine obstructive airway conditions.
31. The student will be able to evaluate data to determine restrictive lung conditions.
32. The student will be able to evaluate data to determine intra-pulmonary shunting.
33. The student will be able to evaluate calculations; i.e., \( V_D/V_T, P(A-a)O_2 \).
34. The student will be able to evaluate data to determine refractory hypoxemia.
35. The student will be able to monitor and adjust fluid balance.
36. The student will be able to evaluate data to determine Acute Lung Injury.
37. The student will be able to evaluate data to determine Acute Respiratory Distress Syndrome.
38. The student will be able to evaluate data to determine Respiratory Failure.

The student will be able to determine the appropriateness of respiratory care plans and recommend modifications when indicated by data.

39. The student will be able to recommend interventions based on data for metabolic acidosis.
40. The student will be able to recommend interventions based on data for metabolic alkalosis.
41. The student will be able to recommend interventions based on data for respiratory alkalosis.
42. The student will be able to recommend interventions based on data for respiratory acidosis.
43. The student will be able to recommend interventions based on data from hemoximetry.
44. The student will be able to recommend interventions based on data from electrolytes.
45. The student will be able to recommend interventions based on data from microbiology.
46. The student will be able to recommend interventions based on data from PFTs.
47. The student will be able to recommend interventions based on data from EKGs.
48. The student will be able to recommend interventions based on data from chest radiographs.

ASSESSMENT OF LEARNER OUTCOMES:

Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

Grading Scale:

- 100-93 = A
- 92-84 = B
- 83-75 = C
- 60-74 = D

A grade of C or better is required for students to complete the Respiratory Therapy program.

SPECIAL NOTES:

This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.
Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact Director of the Academic Resource Center at: 913-288-7670.