COURSE SYLLABUS

LAST REVIEW	Spring 2021
COURSE TITLE	Cardiopulmonary Care & Diagnostics II
COURSE NUMBER	RSCR 0245
DIVISION	Health Professions
DEPARTMENT	Respiratory Therapy
CIP CODE	51.0908
CREDIT HOURS	4
CONTACT HOURS/WEEK	Class: 4
PREREQUISITES	None
COURSE PLACEMENT	This course is part of a selective admission program. Students must be admitted to the Respiratory Therapy program to enroll in this course.

COURSE DESCRIPTION

This a foundational course beyond the introductory level in Respiratory Therapy clinical information gathering, clinical data analysis, clinical data interpretation, recognition of disease signs and symptoms, and development of therapeutic care plans for cardiopulmonary abnormalities and illnesses. Content from introductory courses in the Respiratory Therapy program sequence is applied, expanded, added to, and extended to clinical scenarios, questions, discussions, and research in this class. Arterial blood gases, pulmonary function tests, electrocardiograms, complete blood counts, electrolytes, radiographs, therapeutic plans and disease management are key content areas of the course.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit: https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. Formulate the knowledge and critical reasoning skills necessary to pass the National Board for Respiratory Care Therapist Multiple Choice Exam.
2. Execute the variety of assessment and intervention skills necessary to provide respiratory care in the clinical setting at the entry Registered Respiratory Therapist level.
3. Integrate professional behaviors necessary at the entry Registered Respiratory Therapist level.

TEXTBOOKS
http://kckccbookstore.com/

METHODS 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, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE
I. Evaluate patient data
   A. Arterial blood gases and hemoximetry
   B. Buffering and compensation mechanisms
   C. Anion gap
   D. Electrolytes
   E. Noninvasive monitoring; transcutaneous, oximetry, capnography
   F. Complete blood count; RBC, WBC, Hb, Hematocrit
   G. Coagulation studies
   H. Sputum assessment; culture and sensitivity, gram stain, AFB
   I. Electrocardiograms
   J. Hemodynamics; C.O., B/P, SV, RVP, PAP, PCWP
   K. Oxygenation; DO2, P/F ratio, P(A-a)O2, Oxygenation index, PvO2, SpO2, SvO2
   L. Capnography, V_D/V_T ratio
   M. Heart sounds
   N. Imaging studies; lateral neck radiograph, chest radiograph, MRI, CT
   O. Pulmonary function tests; spirometry, lung volumes, diffusion, C_L, RAW,
   P. Airway pressures and graphics; PEEP, mPaw, P_{plat}, P_{peak}
   Q. 6-minute walk test
   R. Cardiopulmonary stress test
   S. Metabolic study tests; RQ, RER, REE, TEE, VO2, VCO2
   T. Sleep studies

II. Types and severity of cardiopulmonary conditions
   A. Ventilation disorders
   B. Oxygenation disorders
   C. Acid-base disorders
   D. Obstructive lung diseases
   E. Restrictive lung diseases
   F. V/Q mismatches
   G. Pulmonary infections
   H. Pleural diseases
   I. Pulmonary edema
   J. Heart failure; left heart failure, right heart failure
   K. Deconditioned state
   L. Acute respiratory distress syndrome
   M. Respiratory insufficiency and failure
   N. Sleep disorders

III. Cardiopulmonary care plan interventions
   A. Plans for ventilation disorders
   B. Plans for oxygenation disorders
   C. Plans for acid-base disorders
   D. Plans for obstructive diseases
   E. Plans for restrictive diseases
   F. Plans for V/Q mismatches
   G. Plans for pulmonary infections
   H. Plans for metabolic disorders
   I. Plans for ECG abnormalities
   J. Plans for pleural diseases
   K. Plans for heart failure
   L. Plans for the deconditioned state
   M. Plans for ARDS
   N. Plans for respiratory insufficiency and failure
   O. Plans for sleep disorders

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

   A. Evaluate clinical tests to identify cardiopulmonary problems.
      1. Evaluate arterial blood gas and acid-base values.
      2. Evaluate anion gap values.
      3. Evaluate electrolyte values.
      4. Evaluate hemoximetry values.
      5. Evaluate noninvasive transcutaneous, oximetry, and capnography values.

6. Evaluate complete blood count results.
7. Evaluate coagulation studies results.
8. Evaluate sputum culture and sensitivity results.
9. Evaluate electrocardiograms.
10. Evaluate hemodynamic values.
11. Evaluate DO2 values.
12. Evaluate P/F ratios.
13. Evaluate P(A-a)O2 values.
14. Evaluate oxygen index results.
15. Evaluate V_D/V_T ratios.
16. Evaluate heart sound results.
17. Evaluate imaging studies; lateral neck radiograph, chest radiograph, MRI, CT.
18. Evaluate pulmonary function tests; spirometry, lung volumes, diffusion, C_L, RAW, P_{plat}, P_{peak}.
19. Evaluate 6-minute walk test results.
20. Evaluate cardiopulmonary stress test results.
21. Evaluate metabolic study results; RQ, REE, TEE, VO2, VCO2.
22. Evaluate sleep studies.

B. Differentiate types and severity of cardiopulmonary problems.
23. Differentiate ventilation disorders.
24. Differentiate oxygenation disorders.
25. Differentiate acid-base disorders.
26. Differentiate obstructive lung diseases.
27. Differentiate restrictive lung diseases.
28. Differentiate V/Q mismatches, shunt, and deadspace.
29. Differentiate pulmonary infections.
30. Differentiate pleural diseases.
31. Differentiate pulmonary edema.
32. Differentiate heart failures.
33. Differentiate deconditioned states.
34. Differentiate acute lung injure and acute respiratory distress syndrome.
35. Differentiate respiratory insufficiency and respiratory failures.
36. Differentiate sleep disorders.

C. Recommend cardiopulmonary care plan interventions.
37. Recommend interventions for ventilation disorders.
38. Recommend interventions for oxygenation disorders.
39. Recommend interventions for acid-base disorders.
40. Recommend interventions for obstructive diseases.
41. Recommend interventions for restrictive diseases.

42. Recommend interventions for V/Q mismatches.
43. Recommend interventions for pulmonary infections.
44. Recommend interventions for metabolic disorders.
45. Recommend interventions for ECG abnormalities.
46. Recommend interventions for pleural diseases.
47. Recommend interventions for heart failure.
48. Recommend interventions for deconditioned states.
49. Recommend interventions for ALI and ARDS.
50. Recommend interventions for respiratory insufficiency and respiratory failure.
51. Recommend interventions for sleep disorders.

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook
https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf

College Catalog
https://www.kckcc.edu/academics/catalog/index.html

College Policies and Statements
https://www.kckcc.edu/about/policies-statements/index.html

Accessibility and Accommodations
https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html.