COURSE SYLLABUS

LAST REVIEW	Spring 2021
COURSE TITLE	Cardiopulmonary Care & Diagnostics III
COURSE NUMBER	RSCR 0285
DIVISION	Health Professions
DEPARTMENT	Respiratory Therapy
CIP CODE	51.0908
CREDIT HOURS	4
CONTACT HOURS/WEEK	Class: 4
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 is a comprehensive Respiratory Therapy course. Content from previous classes in the Respiratory Therapy program sequence is applied, expanded, add to, and extended to scenarios, questions, discussions, and simulations in this class. The NBRC Therapist Multiple Choice Exam Detailed Content Outline, critical care, mechanical ventilation, and advanced cardiovascular life support 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. Apply respiratory care comprehensively at the NBRC RRT level based on the NBRC Therapist Multiple Choice Exam Detailed Content Outline
   A. Patient data evaluation and recommendations
   B. Troubleshooting and Quality Control of Equipment, and Infection Control
   C. Initiation and modification of interventions

II. Clinical data and interventions for advanced cardiovascular life support
   A. Effective team care
   B. Assessment; primary and secondary assessments, ECG rhythms
   C. BLS, ACLS, PALS, NRP
   D. Airway management
   E. Support ventilation, oxygenation, circulation, perfusion, treat underlying causes
   F. Respiratory arrest
   G. Acute coronary syndromes
   H. Stroke
   I. Bradycardia
   J. Tachycardia
   K. Cardiac arrest
   L. Immediate post-cardiac arrest care

III. Clinical data and interventions for critical care
   A. Blood gases/acid-base/hemoximetry
   B. Laboratory results; CBC, electrolytes
   C. Cardiopulmonary calculations; P(A-a)O2, V_D/V_T, P/F ratio, oxygenation index
   D. Hemodynamics; arterial pressure, B/P, RAP, SvO2, PvO2, C.O., PAP, PCWP
   E. Metabolic measurements; VCO2, VO2, RQ, REE, TEE
   F. Capnography
   G. Pharmacology; advanced life support, sedation, pain, neuromuscular blocking agents, airway
   H. Nutritional care; substrate mix, caloric intake, effects of injuries and stress
   I. Shock management; hypovolemic, distributive, cardiogenic, obstructive
   J. Disease management; Respiratory failure, Heart failure
   K. Utilizing evidence-based practice; ARDSNet, NAEPP, GOLD
   L. Provide care in high-risk situations
   M. Assisting an advanced provider with special procedures; bronchoscopy, cardioversion, thoracentesis

IV. Clinical data and interventions for mechanical ventilation
   A. Neonatal modes and settings; CPAP, conventional ventilation, HFV, HFOV, ECMO
   B. Pediatric modes and settings
   C. Adult modes and settings
   D. Waveforms and scales
   E. Pulmonary compliance and airway resistance; P_{max}, $P_{plateau}$, P_{TA}, C_L
   F. Lung protective strategies
   G. Weaning parameters and discontinuance of mechanical ventilation

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

A. Apply respiratory care comprehensively at the NBRC RRT level based on the Therapist Multiple Choice Exam Detailed Content Outline.
   1. Achieve the course cut score for patient data evaluation and recommendations on a comprehensive mock Therapist Multiple Choice Exam.
   2. Achieve the course cut score for troubleshooting and quality Control of equipment, and infection control on a comprehensive Therapist Multiple Choice Exam.
   3. Achieve the course cut score for initiation and modification of interventions on a comprehensive mock Therapist Multiple Choice Exam.

B. Evaluate and recommend clinical data and interventions for advanced life support.
   4. Evaluate and recommend clinical data and interventions for an effective care team.
   5. Evaluate and recommend clinical data and interventions for ECG rhythms.
   6. Evaluate and recommend clinical data and interventions for BLS assessment.
   7. Evaluate and recommend clinical data and interventions for ACLS, PALS, NRP primary and secondary assessments.
   8. Evaluate and recommend clinical data and interventions to identify and treat reversible causes of cardiac or respiratory arrest.
   9. Evaluate and recommend clinical data and interventions for airway management.
   10. Evaluate and recommend clinical data and interventions for respiratory arrest.
   11. Evaluate and recommend clinical data and interventions for acute coronary syndromes.
   12. Evaluate and recommend clinical data and interventions for stroke.
   13. Evaluate and recommend clinical data and interventions for bradycardia.
   14. Evaluate and recommend clinical data and interventions for tachycardia.
   15. Evaluate and recommend clinical data and interventions for cardiac arrest.
   16. Evaluate and recommend clinical data and interventions for immediate post-cardiac arrest care.

C. Evaluate and recommend clinical data and interventions for critical care.
   17. Evaluate and recommend clinical data and interventions for blood gases/acid-base/hemoximetry.
   18. Evaluate and recommend clinical data and interventions for laboratory results; CBC and electrolytes.
   19. Evaluate and recommend clinical data and interventions for cardiopulmonary calculations; P(A-a) O2, V_D/V_T, P/F ratio, oxygenation index.
   20. Evaluate and recommend clinical data and interventions for hemodynamic monitoring; arterial pressure, B/P, RAP, SvO2, PvO2, C.O., PAP, PCWP.
   21. Evaluate and recommend clinical data and interventions for metabolic measurements; VCO2, VO2, RQ, REE, TEE.
   22. Evaluate and recommend clinical data and interventions for capnography.
   23. Evaluate and recommend clinical data and interventions of pharmacology; advanced life support, sedation, pain, neurological blocking agents, airway.
   24. Evaluate and recommend clinical data and interventions for nutritional care; substrate mix, caloric intake, effects of injuries and stress.
   25. Evaluate and recommend clinical data and interventions for shock management; hypovolemic, distributive, cardiogenic, obstructive.
   26. Evaluate and recommend clinical data and interventions for respiratory failure.
   27. Evaluate and recommend clinical data and interventions for heart failure.
   28. Evaluate and recommend clinical data and interventions for high-risk situations; tension pneumothorax, cardiac arrest, rapid response, disaster management.
   29. Evaluate and recommend clinical data and interventions for special procedures; cardioversion, chest tubes, thoracentesis, bronchoscopy, transport.
   30. Evaluate and recommend clinical data and interventions for withdrawal of life support.

D. Evaluate and recommend clinical data and interventions for mechanical ventilation.
   31. Evaluate and recommend clinical data and interventions for neonatal modes and settings; CPAP, conventional ventilation, HFV, HFOV, ECMO.
   32. Evaluate and recommend clinical data and interventions for pediatric modes and settings.
   33. Evaluate and recommend clinical data and interventions for adult modes and settings.
   34. Evaluate and recommend clinical data and interventions for waveforms and scales.
   35. Evaluate and recommend clinical data and interventions for pulmonary compliance and airway resistance; P_{max}, $P_{plateau}$, P_{TA}, $C_{L.}$

36. Evaluate and recommend clinical data and interventions for lung protective strategies.
37. Evaluate and recommend clinical data and interventions for weaning parameters.

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.