

Respiratory Care Examination Preparation (RSPT 2230) Capstone Course



Credit: 2 semester credit hours (2 hours lecture, 1 hour lab)

Prerequisite/Co-requisite: RSPT 1113, RSPT 1207, RSPT 1261, RSPT 1262, RSPT 1325, RSPT 1329, RSPT 1331, RSPT 1335, RSPT 1360.

Course Description

Comprehensive review to optimize respiratory credentialing exam success

Required Textbook and Materials

1. Comprehensive Respiratory Therapist Exam Review, 5th Edition, James R. Sills, MEd, CPFT, RRT
 - a. ISBN# 978-0-323-06701
2. Certified Respiratory Therapist Exam Review Guide (JB Review), Craig L. Scanlan, Albert J. Heuer, Louis M. Sinopoli
 - a. ISBN# 978-07637-5511-7

Course Objectives

Upon completion of this course, the student will be able to:

1. Roadmap to Success (SCANS: F1, C5, C6, C7, C8, C15)
2. Test taking Tips and Techniques (SCANS: F7, F11, F12)
3. Review Existing Data (SCANS: F1, F2, F5, F9, F12, C5, C6, C7, C8, C9)
4. Collect and Evaluate pertinent Clinical Information (SCANS: F1, C5, C6, C7, C8, C16)
5. Recommend Procedures to Obtain Additional Data (SCANS: C7, C12, C15, C16, C18)
6. Manipulate Equipment by order or Protocol (SCANS: F7, F8, F9, F12, C15, C16, C18, C19, C20)
7. Ensure Infection Control (SCANS: F1, F8, F13, C5, C7, C15, C18, C19)
8. Perform Quality Control Procedures (SCANS: F12, F13, C5, C6, C7, C8, C15, C16, C18,)
9. Maintain Records and Communicate Information (SCANS: F1, F2, C5, C7, C8, C9, C10, C13, C14)
10. Maintain patient airway/Care of Artificial Airways (SCANS: F5, F8, F9, F12, C15, C18, C19, C20)
11. Remove Bronchopulmonary Secretions (SCANS: F5, F8, F9, F12, C15, C18, C19, C20)

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12. Achieve Adequate Respiratory Support (SCANS: F5, F8, F9, F12, C15, C18, C19, C20)
13. Evaluate and Monitor patient's Objective and Subjective Responses to Respiratory Care (SCANS: F5, F7, C16)
14. Independently Modify Therapeutic procedures Based on the Patient's Response (SCANS: F8, F12, C5, C6, C7, C12, C15, C18, C19, C20)
15. Recommend modifications in the Respiratory Care Plan (SCANS: F8, F12, C5, C6, C7, C12, C15, C18, C19, C20)
16. Determine Appropriateness of the Prescribed Respiratory care Plan and Recommend Modifications When Indicated (SCANS: F8, F12, C5, C6, C7, C12, C15, C18, C19, C20)
17. Initiate, Conduct, or Modify respiratory care techniques in an Emergency Setting (SCANS: F8, F12, C5, C6, C7, C12, C15, C18, C19, C20)
18. Act as an Assistant to the physician Performing Special procedures (SCANS: F8, F12, C5, C6, C7, C12, C15, C18, C19, C20)
19. Initiate and Conduct Pulmonary Rehabilitation and Home Care (SCANS: F8, F12, C5, C6, C7, C12, C15, C18, C19, C20)
20. Perform Cardiopulmonary Calculations (SCANS: F3, F4)

SCANS Skills and Competencies

Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its research, the Commission determined that "workplace know-how" consists of two elements: foundation skills and workplace competencies.

Course Outline

- A. Roadmap to Success
 1. Learn the chapter review process
 2. Test taking Tips and Techniques
 3. Test taking strategies
- B. Review Existing Data
 1. Past and present medical history
 2. Physical exams, including vital signs and physical findings
 3. Lab studies such as pulmonary function testing, CBC, electrolytes, coagulation studies, sputum tests, and arterial Blood gases
 4. Imaging studies, including chest X-rays and MRI, CT, PET, and V/Q scans
 5. Monitoring data such as pulmonary mechanics, noninvasive monitoring, and fluid balance
 6. Cardiac testing results: most notably ECG and hemodynamic monitoring
 7. Maternal, perinatal, neonatal history and data

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- C. Collect and Evaluate pertinent Clinical Information
 - 1. Assess the patient's overall cardiopulmonary status by: inspection, palpation, percussion, and auscultation
 - 2. Integrate common physical examination findings
 - 3. Interview the patient to obtain essential information regarding the patient's:
 - a. Level of consciousness, ability to cooperate, and emotional state
 - b. Level of pain
 - c. Breathing difficulties and exercise tolerance
 - d. Cough and sputum production
 - e. Nutritional status
 - f. Social history
 - g. Advance directives
 - h. Assess the patient's learning needs
 - i. Review and interpret chest and lateral neck radiographs
 - j. Perform and interpret the results of selected diagnostics procedures
- D. Recommend Procedures to Obtain Additional Data
 - 1. Radiographic and other imaging studies
 - 2. Diagnostic bronchoscopy
 - 3. Sputum Gram stain, culture, and sensitivities
 - 4. Bronchoalveolar lavage
 - 5. Pulmonary function testing
 - 6. Lung mechanics
 - 7. Blood gas analysis, pulse oximetry, and transcutaneous monitoring
 - 8. Capnography
 - 9. Electrocardiogram
 - 10. Hemodynamic monitoring
 - 11. Sleep studies
- E. Manipulate Equipment by order or Protocol
 - 1. Oxygen administration devices
 - 2. Humidifiers, nebulizers, and mist tents
 - 3. Resuscitation devices
 - 4. Ventilators, CPAP devices, and breathing circuits
 - 5. Artificial airways
 - 6. Vacuum systems, suction, and pleural drainage devices
 - 7. Gas cylinders, reducing valves, flowmeters, and Oxygen blenders
 - 8. Point-of-care blood gas analyzers
 - 9. Incentive breathing devices
 - 10. Percussors and vibrators
 - 11. Positive expiratory pressure (PEP) and vibratory PEP devices
 - 12. Manometers
 - 13. Bedside pulmonary function devices
 - 14. CO, He, O₂, and specialty gas analyzers
 - 15. ECG monitors and 12-lead ECG machines
 - 16. Noninvasive oximetry monitoring devices
 - 17. Aerosol drug-delivery systems
 - 18. Bronchoscopes

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- F. Ensure Infection Control
 - 1. Ensure cleanliness of equipment by
 - a. Selecting or determining appropriate agent and technique for disinfection and/or sterilization
 - b. Performing procedures for disinfection and/or sterilization
 - c. Monitoring effectiveness of sterilization procedures
 - 2. Ensure proper handling of biohazardous materials
 - 3. Adhere to infection control policies and procedures
 - 4. Incorporate ventilator-associated pneumonia protocol
 - 5. Implement infectious disease protocols, e.g., Avian flu, SARS
 - 6. Transmission prevention
- G. Perform Quality Control Procedures
 - 1. Perform quality control procedures
 - 2. Record and monitor QC data using accepted statistical methods
- H. Maintain Records and Communicate Information
 - 1. Accept and verify patient care orders
 - 2. Record therapy and results using conventional terminology
 - 3. Communicate information regarding a patient's status to appropriate members of the health care team
 - 4. Apply computer technology to patient safety initiatives and to document patient management
 - 5. Communicate results of therapy and modify therapy according to protocols
 - 6. Explain planned therapy and goals to the patient in understandable terms
 - 7. Educate the patient and family concerning smoking cessation and disease management
- I. Maintain patient airway/Care of Artificial Airways
 - 1. Proper position a patient
 - 2. Insertion of oropharyngeal and nasopharyngeal airways
 - 3. Endotracheal intubation
 - 4. Assess tube placement
 - 5. Maintain position in the airway and appropriate cuff inflation
 - 6. Tracheostomy care
 - 7. Change tracheostomy tubes
 - 8. Maintain adequate humidification
 - 9. Extubation
- J. Remove Bronchopulmonary Secretions
 - 1. Perform postural drainage, percussion, and vibration
 - 2. Instruct and encourage bronchopulmonary hygiene techniques
 - 3. Perform airway clearance using mechanical devices
 - 4. Clear secretions via suctioning
 - 5. Administer aerosol therapy with prescribed medications
- K. Achieve Adequate Respiratory Support
 - 1. Instruct a patient in deep breathing and muscle training
 - 2. Initiate and adjust setting
 - 3. Select ventilator graphics
 - 4. Apply disease-specific ventilator protocols

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5. Initiate and select appropriate settings for high frequency ventilation
6. Initiate and modify weaning procedures
7. Administer medications
8. Administer oxygen
9. Position patient to minimize hypoxemia
10. Prevent procedure associated hypoxemia
- L. Evaluate and Monitor patient's Objective and Subjective Responses to Respiratory Care
 1. Recommend and review chest radiographs
 2. Evaluate and monitor patient's response to therapy
 3. Assess proper gas exchange
 4. Assess and monitor patient-ventilator interface, including integrity of artificial airways
 5. Measure pulmonary compliance, measure airway resistance, and interpret normal airway graphics
 6. Measure FIO₂ and/or liter flow
- M. Independently Modify Therapeutic procedures Based on the Patient's response
 1. Terminate treatment based on therapeutic goal attainment, adverse effects, or end of life considerations
 2. Modify treatment techniques, including IPPB, IS, aerosol therapy, oxygen, and specialty gas therapies; bronchial hygiene; and suctioning
 3. Adjust or alter artificial airway management techniques according to patient needs
 4. Monitor, modify, and adjust both invasive and noninvasive mechanical ventilation settings
 5. Initiate procedures for weaning
- N. Recommend modifications in the Respiratory Care Plan
 1. Initiation of procedures
 2. Selecting medications
 3. Remove and discontinuing therapies
 4. Changes related to mechanical ventilation
 5. Based on mechanical ventilation waveform interpretation, recommend changes related to eliminating auto-PEEP and flow starvation, as well as reducing plateau pressure
- O. Determine Appropriateness of the Prescribed Respiratory care Plan and Recommend Modifications When Indicated
 1. Analyze available information to determine the pathophysiological state
 2. Review planned therapy for appropriateness
 3. Determine appropriateness of prescribed therapy
- P. Initiate, Conduct, or Modify respiratory care techniques in an Emergency Setting
 1. Treat cardiopulmonary collapse
 2. Participate in safe and effective intra-hospital and external ground and air patient transport
 3. Participate as a member of the medical emergency team

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- 4. Prepare for and assist with disaster management
- Q. Physician assistant while performing special procedures
 - 1. Intubation
 - 2. Bronchoscopy
 - 3. Thoracentesis
 - 4. Tracheostomy
 - 5. Chest tube insertion
 - 6. Cardioversion
- R. Initiate and Conduct Pulmonary Rehabilitation and Home Care
 - 1. Monitor and maintain home respiratory equipment
 - 2. Explain the planned therapy and associated goals of pulmonary rehab and home care
 - 3. Educate patient and family
 - 4. Interact with a case manager
- S. Perform Cardiopulmonary Calculations
 - 1. Perform cardiopulmonary calculations
 - 2. Verify computations

Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

1. Three NBRC practice Exams	15%
2. NBRC WRRT Comprehensive SAE	60%
3. Clinical simulations	20%
4. Attendance	5%

Course Requirements

- 1. Must pass the NBRC Comprehensive SAE Exam with a score of 55 to pass the course, and to exit the Respiratory Care Program.
- 2. Attend the Respiratory Care Exam Review Seminar

Course Policies

- 1. **Attendance.** If you do not attend class you are missing some very valuable information. Test will include both textbook material and anything mentioned in class. There will be a sign in and sign out sheet for each class. Attendance grade is as follows:
 - a. 0 classes missed 100
 - b. 1 class missed 92
 - c. 2 classes missed 84

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- d. 3 classes missed 76
 - e. 4 classes missed 67
 - f. 5 classes missed dropped from class
2. **Homework Assignments.** Please turn in homework assignments at the start of the next class meeting. **NO LATE WORK ACCEPTED!!!!** If you have an excused absence you may e-mail your work to me before the class starts. If the absence is not excused you will receive a zero.
 3. **Absences.** According to LIT policy students with approved absences shall be allowed to make up examinations and written assignments without penalty. This privilege does not extend to unapproved absences. The determination of whether an absence is excused or approved is the responsibility of the instructor, except in the case of approved absence for an Institute-sponsored activity. If absences seriously interfere with performance the instructor may recommend to the Department Chair that the student be dropped from the course. You may be asked to present documentation to the instructor as to why the absence was necessary for the next class meeting that you attend, (i.e. doctor excuse, funeral pamphlet, note from child's doctor, etc.).
 4. **Make-up Exam.** Students may make-up an exam only if the absence is excused by the instructor. The make-up exam will be taken on the next class day that you return.
 5. **Class Roll** will be taken on the first and fourth class days. If your name is not on the class roster on the fourth class day, you will be asked to leave class until this matter is addressed.
 6. No eating, no drinking, turn off beepers, turn off cell phones, no texting, no disruptive behavior, and
 7. No children allowed in class.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Week One:	Course Orientation/Assignments Roadmap to Success Test Taking Tips and Techniques
Week Two:	Reviewing Data
Week Three:	Collect and Evaluate Pertinent Clinical Information
Week Four:	Exam #1
Week Five:	Recommendation of procedures to obtain additional data

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	Manipulate equipment by order or protocol
Week Six:	Infection Control
Week Seven:	Quality Control Procedures
Week Eight:	Records and Communication of Information
Week Nine:	Exam #2
Week Ten:	Patent airway / care of artificial airways Removal of Bronchopulmonary Secretions
Week Eleven:	Respiratory Support Evaluate and Monitor Patient's objective and subjective responses to Respiratory Care
Week Twelve:	Modify Therapeutic Procedures based on Patient's Response Appropriateness of Prescribed Respiratory Care Plan Recommend Modifications when Indicated
Week Thirteen:	Exam #3
Week Fourteen:	Initiate, conduct, or modify respiratory care techniques in an Emergency Setting
Week Fifteen:	Assisting physician's while performing Initiate and conduct pulmonary rehabilitation and Home Care
Week Sixteen:	Perform Cardiopulmonary Calculations Final Exam