

Respiratory Care Examination Preparation (RSPT 2230) Capstone Course



Credit: 2 semester credit hours (1 hours lecture, 4 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

- a. Comprehensive Respiratory Therapy Exam Preparation Guide, 3rd Edition, Scanlan, Heuer, Rodriquez ISBN-13: 978-1284126921
- b. Attend Persing Review Workshop, which includes textbook 4th Edition, Gary Persing, ISBN-13: 978-1455759033

Course Objectives

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

1. Evaluate Data in the Patient Record
2. Gather Clinical Information
3. Perform Procedures to Gather Clinical Information
4. Evaluate Procedure Results
5. Recommend diagnostic Procedures
6. Assemble and Troubleshoot Equipment
7. Ensure Infection Control
8. Perform Quality Control Procedures
9. Maintain a Patent Airway Including the Care of Artificial Airways
10. Perform Airway Clearance and Lung Expansion Techniques
11. Support Oxygenation and Ventilation
12. Administer Medications and Specialty Gases
13. Ensure Modifications are Made to the Respiratory Care Plan
14. Evidence-Based Medicine Principles
15. Provide Respiratory Care Techniques in High-Risk Situations
16. Initiate and Conduct Patient and Family Education

Course Outline

- A. **Roadmap to Success**
 - 1. Learn the chapter review process
 - 2. Test taking Tips and Techniques
 - 3. Test taking strategies
 - 4. Simulations

- 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

- 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 for general appearance.
 - 3. Interview the patient to obtain essential information regarding the patient's:
Level of consciousness, ability to cooperate, and emotional state
 - a. Level of pain
 - b. Breathing difficulties and exercise tolerance
 - c. Cough and sputum production
 - d. Nutritional status
 - e. Social history
 - f. Advance directives
 - g. Assess the patient's learning needs
 - h. Review and interpret chest and lateral neck radiographs
 - i. 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

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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
- 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

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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
 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
 4. Prepare for and assist with disaster management
- Q. Physician assistant while performing special procedures**
1. Intubation
 2. Bronchoscopy
 3. Thoracentesis
 4. Tracheostomy

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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

93 – 100	A
85 – 92	B
77 – 84	C
68 – 76	D
0 – 67	F

Course Evaluation

Final grades will be calculated according to the following criteria:

1. SAE TMC 20%
2. SAE CSE IG 5% DM 5%
3. Quizzes 10%
4. HW-Persing and Scanlan CSE 30% Pass CSE=100%
5. HW-Persing and Scanlan TMC 30% Actual score

Course Requirements

1. Must pass the NBRC Comprehensive TMC SAE Exam (\$45 for each attempt) with a score of 67% or 94 correct answers, and the CSE SAE exam (\$65 for each attempt) with 73% to pass the course, and to exit the Respiratory Care Program.
2. Attend the Respiratory Care Exam Review Seminar \$250. You must purchase a book with this workshop. The book will be used as well as the code to access practice TMC/CSE online.
4. Homework assignments
5. Quizzes over required reading assignment
5. Clinical simulations from Scanlan and Persing
6. TMC from Scanlan and Persing

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.
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 No children allowed in class.**
7. **During exams please put all of your belongings that include electronic devices against a wall in the classroom. If you have an electronic device out, then you will receive a zero on that exam. If you are caught cheating, then this can result in being dismissed from the program.**
8. **Remediation** – Refer to Respiratory Care Student Handbook.

Technical Requirements (for courses using Blackboard)

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:

https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

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. You may also visit the online resource at <http://www.lit.edu/depts/stuserv/special/defaults.aspx>

Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.