

Course Competency

RET 2274L RESPIRATORY CARE THEORY LABORATORY 1

Course Description

Laboratory for RET 2274. Corequisite: RET 2274. Laboratory fee. (2 hr. lab)

Course Competency	Learning Outcomes
<p>Competency 1: The student will identify resources available in the MDC Library at the Medical Campus. Secondly, the student will describe the techniques that can be utilized to help them study more productively by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Computer / Technology Usage
<ol style="list-style-type: none"> 1. Describing access to the online portal for the MDC Medical Campus Library and be able to locate specific resources specific to the discipline of respiratory care 2. Identifying how to track and manage personal time to maximize productive time for studying and minimize wasted time 3. Identifying study techniques that facilitate learning and retention of course material 	
<p>Competency 2: The student will explain and demonstrate procedures related to high pressure therapeutic gas cylinders by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy
<ol style="list-style-type: none"> 1. Identifying the markings on a medical gas cylinder that identify the material from which it was constructed 2. Identifying the markings on a medical gas cylinder that identify when hydrostatic testing was last done and be able to verbalize when it will need testing again 3. Identifying and differentiating between post and threaded valve systems 	

<ol style="list-style-type: none"> 4. Identifying and differentiating between the various safety systems used on medical gas cylinders, i.e., DISS, PISS, ASSS, color coding, and labels 5. Demonstrating how to safely/properly transport a medical gas cylinder 6. Demonstrating the proper storage techniques for medical gas cylinders 7. Describing the difference between a pressure reducing valve and a flow meter 8. Demonstrating the ability to select and attach the proper reducing valves and regulators for various therapeutic gases and delivery devices, e.g., oxygen masks, mechanical ventilators, etc. 9. Demonstrating the ability to correctly read a pressure gauge on a therapeutic gas regulator in PSIG 10. Describing the tank conversion factor for the E and H-sized compressed gas cylinders 11. Calculating the duration of flow for the E and H cylinders at various flows 12. Identifying and operating a therapeutic gas zone valve 13. Differentiating between a Bourdon gage and Thorpe tube flow meters and describing the pro and cons of each 14. Demonstrating how to connect a flow meter to a 50-psi station outlet (quick connect and DISS) 15. Demonstrating how to correctly set flow using a Bourdon gage and a Thorpe tube flow meter 16. Attaching a bag-mask (resuscitation bag) to a flow meter correctly and adjust it to the proper liter flow 	
<p>Competency 3: The student will explain and demonstrate procedures related to using therapeutic gas flow meters and oxygen delivery devices (low/high flow oxygen masks, large volume nebulizers, pneumatic-driven respiratory equipment, e.g., mechanical ventilators) by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy
<ol style="list-style-type: none"> 1. Demonstrating how to attach a nasal 	

<p>cannula to an oxygen flow meter, properly apply it to a patient's face, and set the flow for a prescribed percentage of oxygen</p> <ol style="list-style-type: none"> 2. Demonstrating how to assemble, apply, and properly utilize the following oxygen delivery devices: simple oxygen mask, partial-rebreathing mask, non-rebreathing mask – as well as describing the FIO₂ each device is capable of delivering 3. Demonstrating how to assemble an air-entrainment oxygen mask, attach it to an oxygen flow meter, properly apply it to a patient's face, and set the flow for a prescribed FiO₂ 4. Demonstrating how to calculate total flow when using an air-entrainment mask at various FiO₂ settings and properly adjust oxygen flow rate to achieve targeted total flow rate 5. Assembling a large-volume nebulizer with water trap, set a prescribed FiO₂, and adjust liter flow to achieve targeted total flow 6. Demonstrating how to assemble and utilize the various adjuncts used with a large volume nebulizer, i.e., tracheostomy collar, face tent, Briggs T-piece, aerosol mask 7. Demonstrating how to assemble and properly set tandem flow meters to deliver high concentrations of oxygen at adequate total flow rates 8. Demonstrating how to assemble and utilize an oxygen blender 9. Demonstrating how to calibrate and utilize an oxygen analyzer 10. Describing the hazards of using oxygen and importance of patient education and posting warning signs when it is used 	
<p>Competency 4: The student will identify and assemble the various types of humidifiers and aerosol generators and demonstrating proper usage by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Information Literacy 3. Critical thinking

1. Assembling and check proper function of a bubble humidifier for use with a nasal cannula
2. Describing how a heat and moisture exchanger works and demonstrating where it should be placed within the ventilator circuit
3. Assembling a heated passover humidifier with a continuous feed system for use with a mechanical ventilator
4. Demonstrating the proper assembling and usage of a small-volume nebulizer with both a mouthpiece/ reservoir tubing, and an aerosol mask
5. Demonstrating the proper assembling and usage of breath-actuated nebulizer
6. Demonstrating the proper usage of a metered dose inhaler (MDI), with and without a holding chamber
7. Demonstrating the proper usage of various types of dry power inhalers (DPI)
8. Demonstrating the proper usage of Respimat® Inhaler
9. Assembling and demonstrating usage of the Respiragard nebulizer for pentanmidine administration
10. Assembling and demonstrating usage of a large-volume nebulizer

Updated: FALL TERM 2022