SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number:	RSPC 105	Department:	Respiratory Care		
Course Title:	Respiratory Care 1	Semester:	Spring	Year:	1997

Objectives/Competencies

Course Objective	Competencies	
1. Oxygen Therapy	 Minimize hypoxemia by positioning the patient properly. Administer oxygen, as needed, and make a recommendation to change the FIO2 or oxygen flow to spontaneously breathing patients. Measure the patient's oxygen percentage, oxygen liter flow or both. Prevent the patient from becoming hypoxemic by using proper technique. 	
2. Oxygen Analyzers	 Get the necessary equipment for the procedure. Put the equipment together, make sure that it works properly, and identify and fix any problems with it. 	
3. Oxygen and other Gas Cylinders, Bulk Storage Systems and Manifolds		
4. Adjunct Hardware: Reducing Valves, Flowmeters, Regulators and High-Pressure Hose Connectors		

Course Objective	Competencies		
5. Air Compressors			
6. Air/Oxygen Proportioners (Blenders)			
7. Oxygen Hoods and Oxygen Tents			
8. Air Entrainment Devices and Masks			
9. Nasal Cannula and Transtracheal Oxygen Catheters			
 Oxygen Masks: Simple Oxygen Mask, Partial Rebreathing Mask, Non-Rebreathing Mask, and Face Tent 			
11. Tracheostomy Appliances: Mask/Collar and Brigg's Adapter/T-Adapter			
12. Patient Assessment: Evaluate the patient's respiratory care plan and make any recommendations for changes, as needed:	 Change the oxygen percentage. Change the flow of oxygen Change the method of administering the oxygen. 		
13. Oxygen Therapy Continued	 List the Pathology of hypoxia: Anoxic, Anemic, Stagnant, Histotoxic. List the effects and causes of hypoxia: Hypoventilation, V/Q mismatch, shunt. List the hazards of oxygen therapy: O2-induced hypoventilation, Absorption atelectasis, O2 toxicity, RLF. 		

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14. Bedside Measuring and Monitoring Devices: Analyze arterial blood.	 Select the appropriate blood gas analyzer. Put the equipment together, make sure it works properly, and identify any problems with it. Perform blood gas analysis. 		
15. Pulse Oximetry	 Check the patient's chart for previous pulse oximetry (SPO2) results. Make a recommendation to perform pulse oximetry. Get an appropriate pulse oximeter and related equipment. Put the equipment together, make sure that it works properly and identify and fix any problems with it. Perform pulse oximetry on your patient. Interpret your patient's pulse oximetry value. 		
 16. Perform the following types of bedside spirometry: Bedside Measuring Equipment: a. Water b. Mercury c. Andaneroid-Type Manometers (Pressure Gauges) 	 Measure and interpret the patient's tidal volume at the bedside. Measure and interpret the patient's inspiratory-to- expiratory ratio at the bedside. Measure and interpret the patient's minute volume at the bedside. Calculate and interpret the patient's alveolar ventilation at the bedside. Measure and interpret the patient's vital capacity as the bedside. Measure and interpret the patient's peak flow at the bedside. 		

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	 7. Measure and interpret the patient's maximum inspiratory pressure at the bedside. a. Get the necessary equipment for the procedure. b. Put the equipment together, make sure that it works properly, and identify and fix any problems with it. 	
17. Inspiratory and/or expiratory force meters (Pressure Gauges)	 Get the necessary equipment for the procedure. Put the equipment together, make sure that it works properly, and identify and fix any problems with it. 	
18. Respirometers	 Get the necessary equipment for the procedure. Put the equipment together, make sure that it works properly, and identify and fix any problems with it. 	
19. Cardiopulmonary Resuscitation	 Establish that the patient is unresponsive and needs CPR. Call out for help. Open the airway. Determine that the patient is not breathing. Ventilate the patient's airway. Add supplemental oxygen. Determine pulselessness. Perform external chest compressions. 	
 20. CPR Equipment: a. Manual Resuscitator (Bag-valve) b. Mouth-to-Valve Mask Resuscitator c. Pneumatic (Demand Valve) 	 Get the necessary equipment for the procedure. Put the equipment together, make sure that it works properly, and identify and fix any problems with it. 	

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 21. Patient Assessment (CPR) 22. Airway Management: Open the patient's Airway a. Oropharyngeal Airways b. Naconbaryngeal Airways 	 Determine and continue to monitor how the patient responds to the procedure. Modify the procedure and recommend any changes in the patient's respiratory care plan, depending on the response. Complications of CPR: a. identify an airway obstruction problem. b. properly position the patient with airway obstruction. c. perform the Heimlich maneuver. Get the necessary equipment for the procedure. Put the equipment together, make sure that it works properly and identify and fix any problems with it 		
 b. Nasopharyngeal Airways c. Oral and Nasal Endotracheal Tubes d. Intubation Equipment: Laryngoscope and Blades e. Tracheostomy Tubes f. Tracheostomy Buttons 	properly and identify and fix any problems with it.		
23. Medical Physics	 List the: Gases in the atmosphere Effect of gravity on gases in the atmosphere Pressure of gases Define the Gas Laws: Boyle's Law Charles' Law Gay-Lussac' Law 		

Course Objective	Competencies
	d. Dalton's Law
	e. General Gas Law
	3. Define Diffusion:
	a. Fick's Law
	b. Graham's Law
	c. Henry's Law