

Sub.	Course Description – توصيف مقرر دراسي	الموضوع	 <b>كلية المعرفة</b> ALMAAREFA COLLEGE
Date		التاريخ	

Course Code & No	RSTH 421		رقم المقرر ورمزه
Course Name	Neonatal & Pediatric Respiratory Care		اسم المقرر
Credit Hours	4		عدد الساعات المعتمدة
Pre-requisite	RSTH 343- Respiratory Care Science III, RSTH 371- Cardiopulmonary Disease I		المتطلب السابق

General Description	توصيف عام
The Neonatal & Pediatric Respirator Care subject equipped the respiratory therapy practionar with neonatal and pediatric special features, pathologies, mechanical ventilation that are necessary to function in the Neonatal and Pediatric intensive care units	

Course Objectives	أهداف المقرر
<p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>Identify the gestational age during which extra-uterine viability occurs, and explain why it cannot occur earlier.</li> <li>Identify several conditions that lead to abnormal development and lung injury</li> <li>Identify the origin of congenital heart anomalies named after the development structure that occur during heart development.</li> <li>Name the three fetal shunts and discuss their role during fetal circulation.</li> <li>Identify various high risk conditions and their adverse effects on pregnancy.</li> <li>Recommend techniques for taking care of the newborn during the neonatal period.</li> <li>List steps for initial assessment of the newborn to determine the need for neonatal resuscitation and name the criteria indicating infant not requiring delivery room resuscitation.</li> <li>List three means for delivery of positive pressure ventilation to the newborn and the advantages and disadvantages.</li> <li>Identify the three fetal shunts, direction of blood flow.</li> <li>Identify apnea of prematurity.</li> <li>List 4 types of heat loss in newborn and pediatric.</li> <li>Identify the anatomical and physiological differences of newborn.</li> <li>Identify the narrowest point of newborn airway.</li> <li>Identify common pulmonary disorders in infants.</li> <li>Identify specific features of commonly used infant and pediatric ventilators.</li> <li>Identify complications associated with mechanical ventilation.</li> <li>List circumstances under which external chest compressions will be required for a newborn and demonstrate the two techniques for delivery of external chest compressions.</li> </ul> <p><b>Cognitive Skills</b></p> <ul style="list-style-type: none"> <li>Explain why knowing the key steps of each stage of fetal development is importan.</li> <li>Discuss the role of the type II pneumocyste in surfactant production.</li> <li>Discuss the various functions of surfactant.</li> <li>Explain how fetal lung liquid differs from amniotic fluid and outline how it is cleared.</li> <li>Discuss the identifiable stages of heart development and explain the development of the heart chambers.</li> </ul>	

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<ul style="list-style-type: none"> <li>• Explain the direction of blood flow and relative vascular pressures in the placenta, umbilical vein, three fetal shunts, and right heart chamber, left heart chamber, pulmonary artery, lung, aorta and umbilical arteries.</li> <li>• Describe current methods used for antenatal and intrapartum assessment of fetal well-being.</li> <li>• Explain preterm labor and postterm pregnancy evaluation and management.</li> <li>• Describe care to be given to infants born with meconium staining.</li> <li>• Describe the Apgar Scoring system and how and when it is performed on the newborn.</li> <li>• Describe the proper delivery room treatment of an infant with suspected diaphragmatic hernia.</li> <li>• Describe the cardiac and pulmonary sequences of events that occur when transitioning from fetal to extra-uterine life, including the changes in the fetal shunts.</li> <li>• Describe the steps of successful transitions.</li> <li>• Describe the pulmonary changes and circulatory changes post-delivery.</li> <li>• Explain the pathophysiology of apnea.</li> <li>• Discuss the main causes of apnea.</li> <li>• Explain strategies for management of apnea.</li> <li>• Describe the symptoms, adverse effects and consequences of Hyperthermia in the Neonatal period.</li> <li>• Discuss the newborn head and body size effect on baby breathing and temperature.</li> <li>• Discuss the tongue size of newborn and its effect on breathing and ETT.</li> <li>• Explain the effect of baby chest on labored breathing.</li> </ul> <p><b>Interpersonal Skills</b></p> <ul style="list-style-type: none"> <li>• Demonstrate Team work skills.</li> <li>• Show Leadership skills.</li> <li>• Develop skills to accommodate and absorb criticism.</li> <li>• Use different strategies to Avoid conflict.</li> <li>• Demonstrate patients' rights and safety.</li> </ul> <p><b>Communication, Information Technology, Numerical</b></p> <ul style="list-style-type: none"> <li>• Demonstrate the utilization of Proper communication channels.</li> <li>• Show Personal professional development skills.</li> <li>• Appraise different modern technologies and communications methods.</li> <li>• Demonstrate Team work skills.</li> </ul> <p><b>Psychomotor</b></p> <ul style="list-style-type: none"> <li>• Perform Apgar Scoring system on an infant.</li> <li>• Demonstrate proper technique for delivery of positive pressure ventilation.</li> <li>• Show the principle modes of operation of Mechanical Ventilation.</li> <li>• Produce the appropriate changes recommendation on mechanical ventilation for infant and pediatric.</li> <li>• Employ the signs of severe or complete airway obstruction that require intervention.</li> <li>• Perform infant respiratory assessment and recommend appropriate intervention.</li> <li>• Participate in an infant resuscitation.</li> </ul>
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Course Outlines	مفردات المقرر
1. Lecture: Fetal Lung Development-part I 2. Lab: Introduction to Neonatal 3. Lecture: Fetal Lung Development-part II 4. Lab: Neonatal Assessment Antenatal assessment & high risk 5. Lecture: Fetal Circulation and Gas Exchange 6. Lab: Neonatal Assessment: Assessment of newborn & APGAR scores 7. Lecture: Antenatal Assessment and High risk 8. Lab: Oxygen therapy and Humidification for	

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<p>neonate</p> <p>9. Lecture: Neonatal Assessment</p> <p>10. Lab: Perinatal Transition of Respiratory in Newborn Normal baby delivery process</p> <p>11. Lecture: Perinatal Transition of Respiratory in Newborn</p> <p>12. Lab: Perinatal Transition of Respiratory in Newborn Identify high risk baby delivery</p> <p>13. Lecture: Pathophysiology of Apnea of Prematurity</p> <p>14. Lab: Perinatal Transition of Respiratory in Newborn</p> <p>15. Complications of delivery</p> <p>16. Lecture: Thermal Regulation of New born</p> <p>17. Lab: Apnea of prematurity Identify apnea</p> <p>18. Lecture: Neonatal &amp; Paediatric Differences</p> <p>19. Lab: Apnea of prematurity Management of apnea</p> <p>20. Lecture: Neonatal Diseases</p> <p>21. Lab: Thermal Regulation (incubator, warmer....etc).</p> <p>22. Lecture: Neonatal Mechanical Ventilation</p> <p>23. Lab: Neonatal Mechanical Ventilation Initial settings</p> <p>24. Lecture: Congenital Heart Defects</p> <p>25. Lab: Neonatal Mechanical Ventilation Management of MV</p> <p>26. Lecture: Infant resuscitation</p> <p>27. Lab: High Frequency Oscillation for neonate</p> <p>28. Lecture: Pediatric Disease ( upper Respiratory Track)</p> <p>29. Lab: Neonatal resuscitation Assessment</p> <p>30. Lecture: Pediatric Disease ( Lower Respiratory Track)</p> <p>31. Lab: Neonatal resuscitation-NRP algorithm</p>	
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<b>References</b>	المراجع
<p><b>Required Texts:</b></p> <p>-Brian K.Wash, Michael P. Czervinske Ropbert M. Diblasi. Perinatal &amp; Pediatric Respiratory Care, 3rd ed., SAUNDERS, ELSEVIER, 2010.</p> <p>.2Essential References</p> <p>-Cairo &amp; Pilbeam's, Mechanical Ventilation, Physiological and Clinical Application, 5th ed. J.M. Cairo Elsevier Wilkins et al, Eds .</p> <p>-Egan's Fundamentals of Respiratory Care, 9th ed. Chicago, Mosby-Yearbook, 2009.</p> <p>-Clinical Practice Guidelines of the American Association for Respiratory Care</p> <p><b>Recommended Books and Reference Material (Journals, Reports, etc).</b></p> <p>Electronic Materials, simulation CDs</p> <p>-Internet resources ,Other learning material such as computer-based programs/CD, professional</p>	

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standards/regulations -Clinical Practice Guidelines of the American Association for Respiratory Care (AARC) website	
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