Faculty	Nursing and Midwifery
Educational Level & Major	Master's Degree in Neonatal Intensive Care Nursing
Course Name	**advanced management and care of infants (1)**
Credits	2
Unit Type	Theoretical
Prerequisite	Principles of Neonatal Intensive Care 1 & 2
Class Schedule	Online and in present
Location	
Number of Students	4 Course
Coordinator	Dr. Mona- Alinejad
Instructors (Alphabetical)	Dr. Mona Alinejad, Dr. Farhad abolhasan choobdar

Course Description: Understanding the physiology and anatomy of the discussed body systems in newborns. Understanding the pathophysiology of respiratory and cardiovascular diseases, pre- and post-operative care for common surgeries, care for common respiratory and cardiac diseases, understanding neonatal cardiac arrhythmias, familiarity with ventilators and their components, familiarity with various ventilator modes and their application in neonates, familiarity with medications such as surfactant (although covered in Clinical Pharmacology, it is also included here in the context of diseases).

Main Goals/Core Competencies:
Familiarity with the pathophysiology of neonatal diseases.

Specific Objectives/Sub-competencies:
Upon completion of this course, the learner is expected to:

- Describe the complete respiratory system in the fetal and neonatal periods.
- Explain the physiology of the neonatal respiratory system.
- Describe the signs and grading of respiratory distress in the neonatal period.
- Explain the importance of Respiratory Distress Syndrome and list the resulting problems.
- Briefly describe the types of pneumonia in the neonatal period.
- Explain how to manage air leak syndrome and pulmonary hemorrhage in the neonatal period.
- List surgical lung diseases in the neonatal period and describe how to manage them.
- Define the concept of apnea in the neonatal period and list how to manage it.
- Explain the principles of assisted ventilation in the neonatal period.

- Describe how to apply respiratory support methods in common neonatal diseases.
- Explain the principles for weaning a neonate from respiratory support devices.
- Describe the methods of surfactant administration and the principles of neonatal care.
- List respiratory assist medications and their methods of administration.
- Describe methods for clinically assessing a neonate under mechanical ventilation and using various devices.
- Explain the importance and methods of oxygen therapy and the principles of using oximeters and pulse oximeters.
- Explain the principles of interpreting neonatal blood gases.
- Briefly describe the anatomy and physiology of the cardiovascular system in the neonatal period.
- List the differences between the fetal and neonatal cardiovascular systems.
- List common types of congenital heart anomalies in the neonatal period and briefly describe how to manage them.
- Explain the importance of ductus arteriosus-dependent anomalies.
- List the signs of heart disease in the neonatal period.
- Describe the management of common heart diseases.
- Describe how to evaluate cardiac problems in the neonatal period.
- Explain the principles of cardiac monitoring and how to use a cardiac monitor.
- Describe routine care for a neonate with heart disease.
- Describe how to prepare the family for heart surgery.
- Describe the signs and management of heart failure in the neonatal period.
- List the care for a neonate after cardiac surgeries.
- State the normal neonatal heart rhythm and describe how to distinguish it from abnormal rhythms.
- Describe the management of common cardiac arrhythmias in the neonatal period.
- Explain the principles of using a cardiac defibrillator in the neonatal period.

Teaching Methods: Lectures, planned lectures, Q&A, group discussions, Problem-Based Learning (PBL), Team-Based Learning (TBL), others as specified Student Duties: Regular **attendance:** active participation Educational Aids: Whiteboard, Online Rooms, slide projector **Evaluation & Grading:** Attendance & participation: 2 point - Final exam: 18 points Exam **Types:** Descriptive, short answer, multiple choice, matching, true/false, others

References:

- Verklan, M.T., Walden, M. and Forest, S. eds., 2020. Core curriculum for neonatal intensive care nursing e-book. Elsevier Health Sciences.
- Fanaroff, A.A. and Fanaroff, J.M., 2019. Klaus and Fanaroff's Care of the High-Risk Neonate E-Book. Elsevier Health Sciences.
- Goldsmith, J.P. and Karotkin, E.H., 2003. Introduction to assisted ventilation. Assisted Ventilation of the Neonate, ed, 4, pp.1-14.
- Hockenberry, M.J. and Wilson, D., 2018. Wong's nursing care of infants and children-E-book. Elsevier Health Sciences.

Weekly Schedule & Topics	Instructor
1-Course plan and introduction to general topics related to Principles of Advanced Neonatal Care. Physiology and anatomy of the neonatal respiratory system. Development of the neonatal respiratory system.	**Dr. Alinejad**
2-Common Respiratory Diseases in Neonates (1): Respiratory Distress Syndrome (RDS), pathophysiology and symptoms of respiratory diseases, diagnosis, assessment and monitoring of complications, prevention and care. Aspiration syndrome and meconium aspiration, pathophysiology and symptoms, treatment, nursing care	**Dr. Alinejad**
3- Common Respiratory Diseases in Neonates (2): Pneumonia, pathophysiology and symptoms, treatment, nursing care. PPHN, TTN, Lung Hypoplasia, Apnea	**Dr. Alinejad**
4-Common Respiratory Diseases in Neonates (3): Chronic Lung Disease, Air Leak Syndrome, Pulmonary Hemorrhage, pathophysiology and symptoms, treatment, nursing care.	**Dr. Alinejad**
5-Common Respiratory Diseases in Neonates (4): Surgical chest diseases, pathophysiology and symptoms, treatment, nursing care, causes and evaluation methods.	**Dr. Alinejad**
6-Principles of Mechanical Ventilation. Neonatal lung mechanics.	**Dr .Choobdar**
7-Common Methods of Mechanical Ventilation in Neonates. Ventilator and device settings (1).	**Dr .Choobdar**
8-Common Methods of Mechanical Ventilation in Neonates. Ventilator and device settings (2).	**Dr .Choobdar**
9-Preparing the Neonate for Weaning from Mechanical Ventilation. Monitoring the neonate after weaning.	**Dr .Choobdar**
10-Respiratory Physiotherapy in Neonates (1).	**Dr. Alinejad**
11-Respiratory Physiotherapy in Neonates (2).	**Dr. Alinejad**
12-Interpretation of Blood Gases (Venous and Arterial).	**Dr .Choobdar**
13- Review of Common Diseases and Types of Common Congenital Heart Anomalies in the Neonatal Period (1).	**Dr .Choobdar**
14- Review of Common Diseases and Types of Common Congenital Heart Anomalies in the Neonatal Period (2). Heart Failure.	**Dr .Choobdar**
15- Review of Common Diseases and Types of Common Normal Rhythms and Cardiac Arrhythmias. Interpretation of neonatal ECG.	**Dr .Choobdar**
16- Preparing the Neonate for Cardiac Surgeries. Post-operative care. Family care and education and family support.	**Dr. Alinejad**