

Syllabus and Curriculum
of
Diploma in Neonatal Care Technician course

Uttar Pradesh State Medical Faculty, Lucknow.

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OBJECTIVES OF THE COURSE

To train a person to be a Neonatal Care Technician who can work along with doctors and nurses in taking care of normal and sick neonates and can ensure safe & effective use of technological systems.

Outline of Curriculum of Diploma in Neonatal Care Technician course

FIRST YEAR

THEORY (Classes: 9 AM to 12 Noon)

First paper : Syllabus covers -

1. Normal Neonates & Low Birth Weight Neonates.

Second paper : Syllabus covers -

1. Basic structure and functioning of NICU, Housekeeping and Infection prevention & Clinical Skills.

Outline of Curriculum
of
Diploma in Neonatal Care Technician
course

SECOND YEAR

THEORY (classes:9 AM to 12 Noon)

First paper : Syllabus covers -

1. Neonatal Resuscitation & Common disorders of Neonates.

Second paper : Syllabus covers -

1. NICU Equipment & Clinical Skills.

ELIGIBILITY CRITERIA FOR ADMISSION & DURATION OF THE COURSE

COURSE DURATION:-

- It is 2 years, **full time** Diploma Course.

ELIGIBILITY:-

- Candidate must have passed 12th with
Physics, Chemistry, Biology
Or
Physics, Chemistry, Maths
with 35% marks in Intermediate exams.

(From UP board or any other recognised board).
- Candidate must have completed age of 17 years of age as on 31st December of admission year. There is no maximum age limit for the admission.

SCHEDULE OF EXAMINATION

FIRST YEAR

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	1. Normal Neonates & Low Birth Weight Neonates.	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	1. Basic structure and functioning of NICU, Housekeeping and Infection prevention & Clinical Skills.	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF EXAMINATION**SECOND YEAR**

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	1. Neonatal Resuscitation & Common disorders of Neonates.	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	1. NICU Equipment & Clinical Skills	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF COURSE

(List of holidays, Total hours, Subject wise allotment of hours)

- **List of Holidays:-**

Sundays	- 52 days
Summer vacation	- 10 days
Winter vacation	- 10 days
Gazetted holidays	- 23 days
Preparatory holidays	- 10 days
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Total Holidays	- 105 days
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- **Total Hours :-**

Theory classes per day	- 3 Hours
Practical classes per day	- 3 Hours
Total hours per day	- 6 Hours
Total days & hours in One year (after deduction of holidays)	- 260 days or - 1560 Hours

SCHEDULE OF COURSE

Subject wise allotment of hours

FIRST YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1. Normal Neonates & Low Birth Weight Neonates.	250 Hrs
<u>Second Paper Theory</u>	1. Basic structure and functioning of NICU, Housekeeping and Infection prevention & Clinical Skills.	250 Hrs
<u>Third Paper Practical</u>	As described in curriculum	780 Hrs
<u>Theory: Other Subjects</u> (These subjects must be taught, though there will not be any exam from these)	1. Basic Computer skills.	30 Hrs
	2. Basic English.	30 Hrs
	3. Soft skills like - Interpersonal relationship skills & moral education	10 Hrs

SCHEDULE OF COURSE

Subject wise allotment of hours

SECOND YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1. Neonatal Resuscitation & Common disorders of Neonates.	380 Hrs
<u>Second Paper Theory</u>	1. NICU Equipment & Clinical Skills.	300 Hrs
<u>Third Paper Practical</u>	As described in curriculum.	780 Hrs

Details of Curriculum for First Year Diploma in Neonatal Care Technician course

PAPER 1st Theory	Topics	Hours.
1. Normal Neonates & Low Birth Weight Neonates.	1. General Orientation about parts of Neonate. Various terms used in Anatomy. Total numbers of bones, their names & location. Basic idea about organization of body ,from cell to organ systems.	06 Hrs
	2. Structure of Neonate Animal cell, Cell organelles & their functions	06 Hrs
	3. Human tissue, types, structure & functions.	10 Hrs
	4. Osteology of Neonate: Names, location, identification and basic details of all bones.	38 Hrs
	5. Joints of Neonate : types, basic structure & examples.	10 Hrs
	6. Skin & appendages.	02 Hrs
	7. GIT of Neonate : Location, Gross structure, various parts & their functions. Details of process of food ingestion, digestion, absorption & defaecation. (Microscopic structure is not required.)	20 Hrs
	8. Respiratory tract of Neonate : Location, Gross structure, various parts & their functions. Details of breathing mechanism, different respiratory volumes. (Microscopic structure is not required.)	30 Hrs
	9. Urinary tract of Neonate : Gross structure, various parts & their functions. (Microscopic structure is not required.) Process of urine formation & voiding.	20 Hrs
	10. Male reproductive system of Neonate: Only gross structure & functions of different parts. (Microscopic structure is not required.)	10 Hrs
	11. Female reproductive system of Neonate: Only gross structure & functions of different parts. (Microscopic structure is not required.) Menstrual cycle.	10 Hrs

Details of Curriculum for First Year Diploma in Neonatal Care Technician course

PAPER 1st Theory	Topics	Hours.
1- Normal Neonates & Low Birth Weight Neonates.	12. Endocrine system of Neonate : Hormones secreted by Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal cortex, Adrenal medulla, Gonads & functions of different hormones. (Details of structure of these glands not required).	10 Hrs
	13. Gross structure of of Neonate brain & spinal cord. Functions of different parts of brain & spinal cord.(Details not required.)	40 Hrs
	14. Blood of Neonate : Composition & Functions. Details about Plasma, RBCs, WBCs, Platelets, Clotting system.	10 Hrs
	15. Gross structure & functions of sensory Organs - Eye, Ear, Nose, Tongue.(Details not required).	30 Hrs
	16. Basic gross structure of heart, vessels opening into heart & Leaving the heart. Arterial & Venous tree of body.	20 Hrs
	17. Lymphatic system of Neonate : Structure & Functions.	10 Hrs
	18. Inumune system of Neonate: Components & various mechanisms of defense.	18 Hrs
	19. Characteristics of a normal newborn	20Hrs
	20. Concept of LBW , VLBW , ELBW babies.	20 Hrs

Details of Curriculum for First Year Diploma in Neonatal Care Technician course

PAPER 2nd Theory	Topics	Hours.
<p>1. Basic structure and functioning of NICU, Housekeeping and Infection prevention & Clinical Skills.</p>	<p>1) INTRODUCTION TO NEONATAL CARE LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <p>I. Define: Preterm, term, post term babies AGA, SGA, LGA babies Live born, stillborn baby, viable fetus</p> <p>II. Calculate: Neonatal mortality rate, Perinatal mortality rate, Still- birth rate and maternal mortality rate</p> <p>III. Take history of neonate IV. Examine a neonate V. Identify common developmental and physiological problems of a neonate</p>	30Hrs
	<p>2) CARE OF THE NEW BORN AT BIRTH AND BEYOND LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <p>i. Describe basic needs of a new born at birth ii. Describe routine care of a newborn baby at birth iii. Describe the components of 'Clean chain' and 'Warm chain' iv. Provide postnatal care for normal babies v. Identify babies who may need special care</p>	20Hrs
	<p>3) THERMAL PROTECTION LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <p>i. Enumerate the mechanism of heat loss in neonates ii. Understand the concept of warm chain. iii. Record body temperature and grade hypothermia iv. Prevent and manage hypothermia v. Explain what is hyperthermia and how to prevent it</p>	10Hrs

Details of Curriculum for First Year Diploma in Neonatal Care Technician course

PAPER 2nd Theory	Topics	Hours.
Basic structure and functioning of NICU, Housekeeping and Infection prevention & Clinical Skills.	<p>4) KANGAROO MOTHER CARE</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ol style="list-style-type: none"> i. Distinguish between kangaroo mother care (KMC) and skin-to-skin care at birth ii. List the components and prerequisites for KMC iii. Enumerate the benefits of KMC and describe the procedure iv. Counsel a mother for KMC 	10Hrs
	<p>5.BREASTFEEDING</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ol style="list-style-type: none"> i. Know the anatomy and physiology of breastfeeding ii. Enumerate advantages of breastfeeding. iii. Help mother(s) with the correct technique of breastfeeding iv. Identify factors enhancing lactation v. Provide breast feeding counselling and support vi. Help mothers in expression of breast milk vii. Manage breastfeeding problems 	30Hrs
	<p>6.LOW BIRTH WEIGHT BABIES</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ol style="list-style-type: none"> i. Classify LBW babies ii. Identify physical features of preterm babies iii. Enumerate problems of preterm & SGA babies iv. Monitor growth and nutrition of LBW baby v. Provide feeding of low birth weight babies vi. 	30Hrs

Details of Curriculum for First Year Diploma in Neonatal Care Technician course

PAPER 2nd Theory	Topics	Hours.
Basic structure and functioning of NICU, Housekeeping and Infection prevention & Clinical Skills.	7.PREVENTION OF INFECTION, HOUSE-KEEPING AND WASTE DISPOSAL LEARNING OBJECTIVES: At the end of this chapter, student will know: <ol style="list-style-type: none"> i. Prevention of infections in the neonatal unit ii. Effective hand washing iii. Housekeeping and disinfection routines iv. Waste disposal v. How to plan surveillance for infection vi. Manage an outbreak of infection 	30Hrs
	8.Clinical skills <ol style="list-style-type: none"> i. Record vitals of neonates ii. Record weight and temperature iii. Clinically assess hypothermia, cold stress and normal temperature iv. Achieve thermal control during hospitalization, transport and at home v. Assist breast feeding <ul style="list-style-type: none"> • Ensure proper attachment • Ensure proper positioning • Manual expression of milk vi. Insert feeding tube and check its position vii. Do gavage feeding and paladai feeding viii. Give intramuscular injection ix. Establish intravenous access x. Provide development supportive care xi. Provide pain management xii. Monitor growth of term and preterm neonates xiii. Clean oral cavity, eyes and body of baby 	100Hrs

Curriculum
for
Practical :- First Year
Diploma in Neonatal Care Technician

	Topics
	Record vitals of neonates
	Record weight and temperature
	Clinically assess hypothermia, cold stress and normal temperature
	Achieve thermal control during hospitalization, transport and at home
Practical	Assist breast feeding <ul style="list-style-type: none"> • Ensure proper attachment • Ensure proper positioning • Manual expression of milk
	Insert feeding tube and check its position
	Do gavage feeding and paladai feeding
	Give intramuscular injection
	Establish intravenous access
	Establish intravenous access
	Provide development supportive care
	Provide pain management
	Monitor growth of term and preterm neonates
	Clean oral cavity, eyes and body of baby

Details of Curriculum for Second Year Diploma in Neonatal Care Technician course

PAPER 1st Theory	Topics	Hours.
1. Neonatal Resuscitation & Common disorders of Neonates.	1 RESUSCITATION OF THE NEWBORN BABY LEARNING OBJECTIVES: At the end of this chapter, student will be able to: <ol style="list-style-type: none"> i. Assess a newborn baby at birth ii. Perform resuscitation of a newborn baby 	20Hrs
	2 POST- RESUSCITATION MANAGEMENT OF AN ASPHYXIATED NEONATE LEARNING OBJECTIVES: At the end of this chapter, student will be able to: <ol style="list-style-type: none"> i. Perform initial stabilization and management ii. Monitor an asphyxiated baby iii. Recognize poor prognostic factors 	20Hrs
	3 NEONATAL SEIZURES LEARNING OBJECTIVES: At the end of this chapter, student will be able to: <ol style="list-style-type: none"> i. Identify neonatal seizures ii. Enumerate causes of neonatal seizures iii. Manage neonatal seizures 	20Hrs
	4 MANAGEMENT OF HYPOGLYCEMIA LEARNING OBJECTIVES: At the end of this chapter, student will be able to: <ol style="list-style-type: none"> i. Identify babies at risk of hypoglycemia ii. Screen babies for hypoglycemia iii. Manage hypoglycaemia 	20Hrs

Details of Curriculum for Second Year Diploma in Neonatal Care Technician course

PAPER 1st Theory	Topics	Hours.
Neonatal Resuscitation & Common disorders of Neonates.	<p>5 NEONATAL SHOCK</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ol style="list-style-type: none"> i. Identify shock ii. Enumerate causes of shock iii. Manage shock 	20Hrs
	<p>6 RESPIRATORY DISTRESS IN NEWBORN</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ol style="list-style-type: none"> i. Describe respiratory distress ii. List common causes of respiratory distress in term and preterm babies iii. Identify babies with respiratory distress and assess severity iv. Administer oxygen v. Monitor baby on oxygen therapy vi. Identify neonates who need referral 	20Hrs
	<p>7 NEONATAL JAUNDICE</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ol style="list-style-type: none"> i. Enumerate characteristics of physiological jaundice ii. Enumerate characteristics of pathological jaundice iii. Assess severity of jaundice clinically iv. Know when to institute phototherapy, exchange transfusion v. Assess neonates with conjugated hyperbilirubinemia 	20Hrs

Details of Curriculum for Second Year Diploma in Neonatal Care Technician course

PAPER 1st Theory	Topics	Hours.
Neonatal Resuscitation & Common disorders of Neonates.	<p>8 NEONATAL SEPSIS</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ul style="list-style-type: none"> i. Identify neonates with sepsis ii. Interpret the sepsis screen iii. Treat neonatal sepsis 	20Hrs
	<p>9 ANEMIA AND BLEEDING IN NEONATES</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ul style="list-style-type: none"> i. Assess and identify cause of anemia and bleeding ii. Provide blood component transfusion iii. Deal with a transfusion reaction 	20Hrs
	<p>10 EMERGENCY TRIAGE ASSESSMENT AND TREATMENT (ETAT)</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ul style="list-style-type: none"> i. Understand the process of identification of sick neonates requiring urgent attention ii. Carryout ETAT (Emergency Triage assessment and treatment) 	20Hrs
	<p>11 CRITERIA FOR ADMISSION AND DISCHARGE FOR A NEONATE</p>	20Hrs
	<p>12 NEONATAL TRANSPORT</p> <p>LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ul style="list-style-type: none"> i. Identify babies who need transfer ii. Prepare and organize transport iii. Document the details and hand over the baby iv. Counsel and support the family v. Provide pre-referral stabilization and enroute care 	20Hrs

Details of Curriculum for Second Year Diploma in Neonatal Care Technician course

PAPER 1st Theory	Topics	Hours.
Neonatal Resuscitation & Common disorders of Neonates.	<p>13 FOLLOW-UP OF HIGH RISK NEWBORNS LEARNING OBJECTIVES: At the end of this chapter, student will know:</p> <ul style="list-style-type: none"> i. Which babies need follow- up (Identify at risk newborn) ii. Where should the SCNU graduate be followed up iii. Who should do the follow- up iv. How to use the follow- up protocol 	20Hrs
	<p>14 COMMUNICATION IN NEWBORN CARE LEARNING OBJECTIVES: At the end of this chapter, student will be able to:</p> <ul style="list-style-type: none"> i. Understand forms of communication ii. Understand the types of information to be provided iii. Understand various levels and components of communication in newborn care. iv. Communicate effectively with the family 	20Hrs

Details of Curriculum for Second Year Diploma in Neonatal Care Technician course

PAPER 1Ind Theory	Topics	Hours.
1- NICU Equipment & Clinical Skills	Care of baby on CPAP	10 Hrs
	Care of baby on ventilator	10 Hrs
	Care of baby under phototherapy	10 Hrs
	Prepare common medications	10 Hrs
	Perform blood glucose estimation using glucometer	10 Hrs
	Rewarm a baby under radiant warmer	10 Hrs
	Neonatal resuscitation	10 Hrs
	Urethral Catheterization	10 Hrs
	Radiant warmer	10 Hrs
	Incubator	10 Hrs
	Phototherapy machine	10 Hrs
	Weighing machine	10 Hrs
	Suction machine	10 Hrs
	Oxygen concentrator	10 Hrs
	Pulse oximeter	10 Hrs
	Multipara monitor	10 Hrs
	Infusion pump	10 Hrs
	Glucometer	10 Hrs

Details of Curriculum for Second Year Diploma in Neonatal Care Technician course

PAPER 1Ind Theory	Topics	Hours.
NICU Equipment & Clinical Skills	Oxygen devices (nasal prongs & hood)	10 Hrs
	Self-inflating bag	10 Hrs
	Breast pump	10 Hrs
	CPAP	10 Hrs
	T-piece resuscitator	10 Hrs
	Ventilator	10 Hrs
	Bilirubin analyzer	10 Hrs
	Laminar flow	10 Hrs
	Autoclave	10 Hrs
	Defibrillator	10 Hrs
	ECG	10 Hrs
	Central medical gas, oxygen and suction	10 Hrs
	Fumigator	10 Hrs

Curriculum
 for
Practical :- Second Year
Diploma in Neonatal Care Technician

	Topics
Practical	Radiant warmer
	Incubator
	Phototherapy machine
	Weighing machine
	Suction machine
	Oxygen concentrator
	Pulse oximeter
	Multipara monitor
	Infusion pump
	Glucometer
	Oxygen devices (nasal prongs & hood)
	Self-inflating bag
	Breast pump
	CPAP
	T-piece resuscitator
	Ventilator
	Bilirubin analyzer
	Laminar flow
	Autoclave
	Defibrillator
	ECG
	Central medical gas, oxygen and suction
	Fumigator