



GOVERNMENT OF JAMMU & KASHMIR
SHER-I-KASHMIR INSTITUTE OF MEDICAL SCIENCES
SOURA SRINAGAR

**Syllabus for Assistant Professor Posts of
the Department of Neonatology,
SKIMS, SOURA.**



A. BASIC SCIENCES

1. Basic Genetics
2. Fetal and Neonatal Immunology
3. Applied Anatomy and Embryology
4. Feto-Placental Physiology
5. Development and Maturation of Lungs, Respiratory Control, Lung Functions, Ventilation, Gas Exchange and Ventilation-Perfusion Relationship
6. Physiology and Development of Cardiovascular System, Developmental Defects, Physiology and Hemodynamics of Congenital Heart Disease
7. Fetal and Intrauterine Growth
8. Development and Maturation of Nervous System, Cerebral Blood Flow and Blood-Brain Barrier
9. Fetal and Neonatal Endocrine Physiology
10. Developmental Pharmacology
11. Developmental Hematology and Bilirubin Metabolism
12. Renal Physiology
13. Physiology of Gastrointestinal Tract, Digestion and Absorption
14. Electrolyte Balance
15. Metabolic Pathways Pertaining to Glucose, Calcium and Magnesium
16. Biochemical Basis of Inborn Errors of Metabolism

B. GENERAL TOPICS

1. Research Methodology
2. Biostatistics
3. Ethics in Perinatology/Neonatology
4. Principles of Education (Objectives, Curriculum, Assessment and Use of Media)

C. PERINATOLOGY

1. Perinatal and Neonatal Mortality, Morbidity and Epidemiology
2. High-Risk Pregnancy: Detection, Monitoring and Management
3. Fetal Monitoring (Clinical, Electronic, Invasive and Non-Invasive)
4. Intrapartum Monitoring and Procedures
5. Assessment of Fetal Risk and Decision for Termination of Pregnancy
6. Diagnosis and Management of Fetal Diseases
7. Medical Diseases Affecting Pregnancy and Fetus
8. Psychological and Ethical Considerations
9. Fetal Interventions
10. Fetal Origin of Adult Disease



D. NEONATAL RESUSCITATION

E. NEONATAL VENTILATION

F. BLOOD GAS AND ACID-BASE DISORDERS

G. NEONATAL ASSESSMENT AND FOLLOW-UP

1. Assessment of Gestation, Neonatal Behaviour and Reflexes
2. Developmental Assessment and Detection of Neuromotor Delay
3. Stimulation Techniques
4. Immunization

I. TRANSPORT OF NEONATES

J. NEONATAL PROCEDURES

K. ORGANIZATION OF NEONATAL CARE

1. Community Neonatology
2. Vital Statistics and Health System
3. Causes of Neonatal and Perinatal Death
4. Neonatal Care Priorities
5. Care at Secondary Level
6. Care at Primary Health Centre
7. Role of Different Health Functionaries
8. National Programmes
9. National Neonatology Forum

H. BODY SYSTEMS

Respiratory System

1. Neonatal Airways
2. Pulmonary Diseases
3. Oxygen Therapy and Monitoring
4. Pulmonary Infections
5. Miscellaneous Pulmonary Disorders



Cardiovascular System

1. Fetal Circulation
2. Cardiovascular Examination
3. Congenital Heart Disease
4. Rhythm Disturbances
5. Neonatal Hypertension
6. Shock

Gastrointestinal System

1. Liver and Biliary Disorders
2. Bilirubin Metabolism
3. Neonatal Jaundice
4. Prolonged Hyperbilirubinemia
5. Kernicterus
6. Congenital Malformations
7. Necrotizing Enterocolitis

Nutrition

1. Fetal Nutrition
2. Physiology of Lactation
3. Breastfeeding
4. Lactation Management and Breast Milk Banking
5. Parenteral Nutrition
6. Vitamins and Micronutrients

Renal System

1. Developmental Disorders
2. Renal Functions
3. Fluid and Electrolyte Management
4. Acute Renal Failure

Endocrinology and Metabolism

1. Glucose Disorders
2. Calcium Disorders
3. Magnesium Disorders
4. Thyroid Disorders
5. Adrenal Disorders
6. Ambiguous Genitalia
7. Inborn Errors of Metabolism



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Hematology

1. Physiology
2. Anemia
3. Polycythemia
4. Bleeding and Coagulation Disorders
5. Rh Hemolytic Disease

Neurology

1. Clinical Neurological Assessment
2. EEG/Ultrasound/CT
3. Neonatal Seizures
4. Intracranial Hemorrhage
5. Brain Imaging
6. Hypoxic Ischemic Encephalopathy
7. Neuromuscular Disorders
8. Degenerative Diseases
9. CNS Malformations

Surgery and Orthopedics

1. Neonatal Surgical Conditions
2. Pre- and Post-Operative Care
3. Neonatal Anesthesia
4. Metabolic Changes During Surgery
5. Orthopedic Problems

Neonatal Infections

1. Intrauterine Infections
2. Superficial Infections
3. Diarrhea
4. Septicemia
5. Meningitis
6. Osteomyelitis and Arthritis
7. Pneumonia
8. Perinatal HIV
9. HBV, Candidemia and Other Infections

Neonatal Imaging

1. X-Ray
2. Ultrasound
3. MRI
4. CT Scan

Neonatal Ophthalmology

1. Developmental Aspects
2. Retinopathy of Prematurity
3. Sequelae of Perinatal Infections