अखिल भारतीय आयुर्विज्ञान संस्थान नागपुर
All India Institute of Medical Sciences, Nagpur
Department of Pediatrics
बाल रोग विभाग

Pediatrics UG curriculum Index page

Mission Statement

To provide comprehensive care for children and their families with special emphasis on providing anticipatory care to parents and family, educate future pediatricians and pediatric specialists and to perform progressive research that will lead to health transformation in the society.

Pediatrics Course Outcome

The course in Pediatrics will include systematic instructions in growth and development, nutritional needs of a child, immunization schedules, management of common diseases of infancy and childhood, scope of social pediatrics and counseling with following specific outcomes-

1.***Knowledge***

At the end of the course, the student shall be able to:

1. Describe the normal growth and development during fetal life, neonatal period, childhood and adolescence and outline deviations thereof;

2. Describe the common pediatric disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation;

3. State age related requirements of calories, nutrients, fluids, drugs, *etc.* in health and disease;

4. Describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents, burns and child abuse;

5. Outline national programs relating to child health including immunization programs.

2. ***Skills***

At the end of the course, the student shall be able to:

1. Take a detailed pediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common laboratory investigations and plan and institute therapy;

2. Take anthropometric measurements, resuscitate newborn infants with bag and mask at birth, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programs, start an intravenous line and provide nasogastric feeding, observe venesection and intraosseous infusion, if possible;

3. Observe and assist in diagnostic procedures such as lumbar puncture, bone marrow aspiration, pleural tap and ascitic tap, liver and kidney biopsy;

4. Distinguish between normal newborn babies and those requiring special care and institute early care to all new born babies including care of preterm and low birth weight babies, provide correct guidance and counseling in breastfeeding;

5. Provide ambulatory care to sick children, identify indications for specialized/in- patient care and ensure timely referral of those who require hospitalization.

3. ***Integration***

The training in Pediatrics shall be done in an integrated manner with other disciplines, such as Anatomy, Physiology, Biochemistry, Forensic Medicine, Community Medicine, Obstetrics and Physical Medicine and Rehabilitation, to prepare the student to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of a team.

Course Content

3.1. *Vital statistics*

Must know

- Definition and overview of Pediatrics with special reference to age-related disorders. Population structure, pattern of morbidity and mortality in children.
- Maternal, perinatal, neonatal, infant and preschool mortality rates. Definition, causes, present status and measures for attainment of goals.
- Current National programs such as ICDS, RCH, Vitamin A prophylaxis, UIP, Pulse polio, ARI, Diarrhea Control Program, *etc.*

Desirable to know

- Other National programs

3.2. *Growth and Development*

Must know

- Normal growth from conception to maturity.
- Anthropometery — measurement and interpretation of weight, length/height, head circumference, mid-arm circumference. Use of weighing machines, infantometer.
- Interpretation of Growth Charts: Road to Health card and percentile growth curves
- Abnormal growth patterns-failure to thrive, short stature.
- Growth patterns of different organ systems such as lymphoid, brain and sex organs.
- Normal pattern of teeth eruption.
- Principles of normal development.
- Important milestones in infancy and early childhood in the areas of gross motor, fine motor, language and personal-social development. 3-4 milestones in each of the developmental fields, age of normal appearance and the upper age of normal.
- Preventable causes and assessment of developmental retardation.
- Psychological and behavioral problems.

Desirable to know

- Measurement and interpretation of sitting height, US:LS ratio and arm span.
- Age-independent anthropometric measurement-principles and application.
- Sexual maturity rating.

3.3. *Nutrition*

Must know

- Normal requirements of protein, carbohydrates, fat, minerals and vitamins for newborn, children and pregnant and lactating mother. Common food sources.
- Breastfeeding–physiology of lactation, composition of breast milk, colostrum, initiation and technique of feeding. Exclusive breastfeeding - Definition and benefits. Characteristics and advantages of breast milk. Hazards and demerits of prelacteal feed, top milk and bottle feeding. Feeding of LBW babies.
- Infant feeding/weaning foods, method of weaning.
- Assessment of nutritional status of a child based on history and physical examination.

- Protein energy malnutrition - Definition, classification according to IAP/Wellcome Trust, acute versus chronic malnutrition. Clinical features of marasmus and kwashiorkar. Causes and management of PEM including that of complications. Planning a diet for PEM.
- Vitamins-Recognition of vitamin deficiencies (A, D, K, C, B-Complex). Etiopatho-genesis, clinical features, biochemical and radiological findings, differential diagnosis and management of nutritional rickets and scurvy. Hypervitaminosis A and D.

Desirable to know

- Characteristics of transitional and mature milk (foremilk and hind milk). Prevention and management of lactation failure and feeding problems.
- Definition, causes and management of obesity.

3.4. *Immunization*

Must know

- National Immunization Programme.
- Principles of Immunization. Vaccine preservation and cold-chain.
- Types, contents, efficacy storage, dose, site, route, contra-indications and adverse reactions of vaccines — BCG, DPT, OPV, IPV, Measles, MMR, Hepatitis B, *H. influenzae* b, Typhoid, JE
- Rationale and methodology of Pulse Polio Immunization.
- Investigation and reporting of vaccine preventable diseases. AFP (Acute Flaccid Paralysis) surveillance.

Desirable to know

- Special vaccines like Pneumococcal, Hepatitis A, Chicken pox, Meningococcal, Rabies.

3.5. *Infectious Diseases*

Must know

- Epidemiology, basic pathology, natural history, symptoms, signs, complica-tions, investigations, differential diagnosis, management and prevention of common bacterial, viral and parasitic infections in the region, with special reference to vaccine-preventable diseases: Tuberculosis, poliomyelitis, diphtheria, whooping cough, tetanus including neonatal tetanus, measles, mumps, rubella, typhoid, viral hepatitis, cholera, chickenpox, giardiasis, amebiasis, intestinal helminthiasis, malaria, dengue fever, AIDS, COVID-19.

Desirable to know

- Kala-azar, leprosy, chlamydia infection

3.6. *Hematology*

Must know

- Causes of anemia in childhood. Classification based on etiology and morphology.
- Epidemiology, recognition, diagnosis, management and prevention of nutritional anemia-iron deficiency, megaloblastic.
- Clinical approach to a child with anemia with lymphadenopathy and/or hepato-splenomegaly.
- Epidemiology, clinical features, investigations and management of thalassemia.

- Approach to a bleeding child.
- Diagnosis of acute lymphoblastic leukemia and principles of treatment .
- Clinical features and management of hemophilia, purpura.
- Diagnosis and principles of management of lymphomas.

Desirable to know

- Types, clinical features and management of acute hemolytic anemia.
- Types, clinical features and management of aplastic anemia.

3.7. *Respiratory system*

Must know

- Clinical approach to a child with cyanosis, respiratory distress, wheezing. Signi-ficance of recession, retraction.
- Etiopathogenesis, clinical features, complications, investigations, differential diagnosis and management of acute upper respiratory infections, pneumonia with emphasis on bronchopneumonia, bronchiolitis, bronchitis. Acute and chronic otitis media.
- Etiopathogenesis, clinical features, diagnosis, classification and management of bronchial asthma. Treatment of acute severe asthma.
- Pulmonary tuberculosis- infection versus disease, difference between primary and post-primary tuberculosis. Etiopathogenesis, diagnostic criteria in children versus adults. Diagnostic aids - technique and interpretation of Mantoux test. Radiological patterns, chemo-prophylaxis and treatment.
- Diagnosis and management of foreign body aspiration. Differential diagnosis of stridor.
- Pathogenesis, clinical features and management of pneumothorax, pleural effusion and empyema.

Desirable to know

- Multidrug resistant tuberculosis, bronchiectasis, pulmonary cysts

3.8. *Gastrointestinal tract*

Must know

- Clinical approach to a child with jaundice, vomiting, abdominal pain, bleeding, hepatosplenomegaly.
- Acute diarrhea disease - Etiopathogenesis, clinical differentiation of watery and invasive diarrhea, complications of diarrheal illness. Assessment of dehydration, treatment at home and in hospital. Fluid and electrolyte management. Oral rehydration, composition of ORS.
- Clinical features and management of acute viral hepatitis, causes and diagnosis of chronic liver disease.
- Common causes of constipation.
- Abdominal tuberculosis

Desirable to know

- Causes, clinical features and management of portal hypertension, Reye’s syndrome, Celiac disease.
- Drug induced hepatitis

3.9. *Central Nervous System*

Must know

- Clinical approach to a child with coma, convulsions, mental retardation.
- Clinical diagnosis, investigations and treatment of acute pyogenic meningitis, encephalitis and tubercular meningitis.
- Seizure disorders - Causes and types of convulsions at different ages. Diagnosis, categorization and management of epilepsy (broad outline). Febrile convulsions - definition, types, management.
- Causes, diagnosis and management of cerebral palsy.
- Acute flaccid paralysis - Differentiation between Polio and Gullain-Barre syndrome.
- Microcephaly, hydrocephalus, chorea

Desirable to know

- Infantile tremor syndrome, infantile hemiplegia

3.10. *Cardiovascular system*

Must know

- Clinical features, diagnosis, investigation, treatment and prevention of acute rheumatic fever. Common forms of rheumatic heart disease in childhood. Differentiation between rheumatic and rheumatoid arthritis.
- Recognition of congenital acyanotic and cyanotic heart disease. Hemodynamics, clinical features and management of VSD, PDA, ASD and Fallot's tetralogy.
- Recognition of congestive cardiac failure in infants and children.
- Hypertension in children-recognition, etiology, referral.

Desirable to know

- Diagnosis and management of bacterial endocarditis, pericardial effusion, myocarditis.

3.11. *Genitourinary system*

Must know

- Etiopathogenesis, clinical features, diagnosis, complications and management of acute post-streptococcal glomerulonephritis and nephrotic syndrome.
- Etiology, clinical features, diagnosis and management of urinary tract infection - related problems.
- Etiology, diagnosis and principles of management of acute renal failure.
- Causes and diagnosis of obstructive uropathy in children.
- Diagnosis and principles of management of chronic renal failure.
- Causes and diagnosis of hematuria.

Desirable to know

- Renal and bladder stones
- Hemolytic uremic syndrome

3.12. *Endocrinology*

Must know

- Etiology clinical features and diagnosis of diabetes and hypothyroidism, hyperthyroidism and goiter in children.

Desirable to know

- Delayed and precocious puberty

3.13. *Neonatology*

Must know

- Definition - live birth, neonatal period, cla-ssification according to weight and gestation, mortality rates.
- Delivery room management including neonatal resuscitation and temperature control
- Etiology, clinical features, principles of management and prevention of birth asphyxia.
- Birth injuries - causes and their recognition.
- Care of the normal newborn in the first week of life. Normal variations and clinical signs in the neonate.
- Breastfeeding - physiology and its clinical management
- Identification of congenital anomalies at birth with special reference to anorectal anomalies, tracheo-esophageal fistula, diaphragmatic hernia, neural tube defects.
- Neonatal jaundice: causes, diagnosis and principles of management.
- Neonatal infection - etiology, diagnosis, principles of management. Superficial infections, sepsis.
- Low birth weight babies - causes of prematurity and small-for-date baby, clinical features and differentiation. Principles of feeding and temperature regulation. Problems of low birth weight babies including retinopathy of prematurity.
- Identification of sick newborn (*i.e.,* detection of abnormal signs - cyanosis, jaundice, respiratory distress, bleeding, seizures, refusal to feed, abdominal distension, failure to pass meconium and urine).

Desirable to know

- Recognition and management of specific neonatal problems-hypoglycemia, hypo-calcemia, anemia, seizures, necrotizing enterocolitis, hemorrhage.
- Common intra-uterine infections.
- Transportation of a sick neonate.

3.14. *Pediatric Emergencies*

Must know

- Status epilepticus.
- Status asthmaticus / Acute severe asthma.
- Shock and anaphylaxis.
- Burns.
- Hypertensive emergencies.
- Gastrointestinal bleeding.
- Comatose child.
- Congestive cardiac failure.

- Acute renal failure.

3.15. *Fluid-Electrolyte*

Must know

- Principles of fluid and electrolyte therapy in children
- Pathophysiology of acid-base imbalance and principle of management

3.16. *Genetics*

Must know

- Principles of inheritance and diagnosis of genetic disorders
- Down's syndrome.

3.17. *Behavioral Problems*

Must know

- Breath holding spells, nocturnal enuresis, temper tantrums, pica.

3.18. *Pediatric Surgical Problems*

Must know

- Diagnosis and timing of surgery of cleft lip/palate, hypospadias, undescended testis, tracheo-esophageal fistula, hydrocephalus, CTEV, umbilical and inguinal hernia, anorectal malformations, hypertrophic pyloric stenosis

3.19. *Therapeutics*

Must know

- Pediatric doses, drug combinations, drug interactions, age specific choice of antibiotics, *etc.*

3.20. *Ophthalmic Disorders*

Good to know

- Congenital and developmental abnormalities
- Acquired eye diseases

3.21. *Otorhinolaryngologic Disorders*

Good to know

- Diseases of the ear, nose and sinuses, oral cavity & pharynx, trachea & larynx, salivary glands

3.22. *Rheumatologic Disorders*

Good to know

- Arthitis, Systemic lupus erythematosus, Juvenile dermatomyositis, Scleroderma, Vasculitides

3.23. *Childhood malignancies*

Good to know

- Retinoblastoma, Wilms tumour, Neuroblastoma, Tumours of liver, soft tissue sarcoma, bone tumours, brain tumours, histiocytoses, hemophagocytic lymphohistiocytoses
- Oncologic emergencies
- Bone marrow transplantation

Semester wise teaching template

Theory classes	Calendar months	Hours of teaching
6th & 7th semesters	January to December	*55 hrs*
Lectures		20
Seminars		20
Integrated sessions		10
SDL		5
8th & 9th semesters	January to December	*65 hrs*
Lectures		20
Seminars		25
Integrated sessions		10
SDL		10
Clinical postings		
3rd &4th semesters	October to August	2 weeks per batch
6th & 7th semesters	January to December	4 weeks per batch (or break into 2+2 weeks)
8th & 9th semesters	January to December	4 weeks per batch (or break into 2+2 weeks)

Pediatric Training during 3rd & 4th semesters

Learning Objective

・*Cognitive:* Normal child, growth, development, feeding, immunization, normal new born.

・*Specific Learning Objective (Skills)*

1. Take a detailed Pediatric history.

2. Understand normal growth and development.

3. Conduct physical examination of children.

4. Perform anthropometry and interpret growth.

5. Developmental assessment of a child.

6. Medical conduct during patient examination.

Theory classes: None

Clinical posting: 2 weeks

Sno		
1	**History Taking**	**Chief Complaints , HOPI** (Fever, Cough, Rapid breathing, headache, seizure, Abdominal pain, Vomitings, jaundice, Hemoptysis, swelling over body, Altered sensorium, weakness of body, Anemia) + **Demography**
2		Past History, Family History, Socioeconomic History
3		Birth History, Development History
4		Immunization, Nutrition **How to make database**
5		**Neonatal history Taking**
6	**General**	Anthropometry+ Growth charts
7		Pulse + Respiration+ BP+ CFT, JVP

8	**Examination**	Pallor, Icterus, Edema, Cyanosis, Lymphadenopathy, clubbing
9		Head to toe Examination + PICCLE
10		Signs of Vitamin Deficiencies
11		Revision of 2 cases 1 hr each + Signs of Rheumatic Fever, Infective Endocarditis, Liver Failure
12	**Internal Assessment Practical**	

Pediatric Training during 6th & 7th semesters

Learning Objectives

- *6th/7th Semester:* Newborn: normal and abnormal and common childhood diseases

A. Theory classes (6th & 7th Semester) (20 hrs)

1. Birth asphyxia
2. Low birth weight babies.
3. Neonatal respiratory distress.
4. Jaundice in newborn.
5. Neonatal infections.
6. Normal fluid and electrolyte balance in children.
7. PEM and its management.
8. Vitamin deficiencies.
9. Nutritional anemia in infancy and childhood.
10. Acute diarrhea, dysentery and dehydration
11. Pneumonias
12. Bronchial asthma including status asthmaticus.
13. Nephrotic syndrome.
14. Acute glomerulonephritis, hematuria and hypertension.
15. Urinary Tract Infections
16. Acute Kidney Injury and Chronic Kidney Diseases
17. Behavioral disorders in children
18. Adolescent growth and normal puberty.
19. Precocious and Delayed Puberty
20. Hypothyroidism

B. Tutorials/Seminars (6th & 7th Semester) (20 hrs)

1. Common problems related to Development (Developmental delay , Cerebral palsy); Discuss the role of the child developmental unit in management of developmental delay & Visit to a child development unit
2. Care of a normal NB
3. Breast feeding
4. Complementary Feeding
5. Neonatal hypoglycemia, hypocalcemia, seizures
6. Chronic and persistent diarrheas
7. Malabsorption syndromes & Celiac disease
8. Child Abuse
9. Diabetes mellitus in children
10. Obesity in children
11. Introduction to Integrated Management of Neonatal and Childhood Illnesses
12. General danger signs for young infants < 2 months of age
13. Assessment and classification of a young infant < 2 months with cough
14. Assessment and classification of a young infant < 2 months with diarrhea
15. Assessment and classification of a young infant < 2 months with feeding difficulty
    Assessment of breastfeeding
    Breastfeeding advice and Management of feeding problems
16. Integrated Management of a sick young infant < 2 months

Advising a young infant < 2 months for immunization and followup

17. Assessment and classification of an older infant and child for cough and/or fast breathing
    Assessment and classification of an older infant and child for fever
18. Assessment and classification of an older infant and child for diarrhea
    Assessment and classification of an older infant and child for malnutrition
19. Integrated Management of an older infant and a child
    Advising a child for immunization and follow up
20. Assessment of complementary feeding and dietary assessment
    Advising parents about Complementary feeding and balanced diet

C. Integrated sessions (6th & 7th Semester) (10 hrs)

Sr No	Topic with specific objectives	Integration with Dept	Type of Integration
	6th Semester		
1	Describe the common mental health problems during adolescence	Psychiatry	Horizontal
2	State the vision and outline the goals, strategies and plan of action of NHM and other important national programs pertaining to maternal and child health including RMNCH A+, RBSK, RKSK, JSSK mission Indradhanush and ICDS Analyse the outcomes and appraise the monitoring and evaluation of NHM Discuss the National Anaemia Control Program	Community Medicine	Vertical
3	List and explain the components, plan, outcome of Reproductive Child Health (RCH) program and appraise its monitoring and evaluation Explain preventive interventions for child survival and safe motherhood	Community Medicine, Obstetrics & Gynaecology	Vertical & Horizontal
4	Explain the components of the Universal Immunization Program and the National Immunization Program Explain the epidemiology of Vaccine preventable diseases	Community Medicine	Vertical
5	Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications	Community Medicine	Vertical
6	Define cold chain and discuss the methods of safe storage and handling of vaccines	Community Medicine	Vertical
7	Discuss immunization in special situations – HIV positive children, immunodeficiency, pre-term, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travellers	Community Medicine	Vertical
8	Discuss causes, clinical features and management of common surgical problems in newborns	General Surgery	Horizontal
9	Recognize common surgical conditions of the abdomen and genitourinary system and enumerate the indications for referral including acute and subacute intestinal obstruction, appendicitis, pancreatitis, perforation intussusception, Phimosis, undescended testis, Chordee, hypospadiasis, Torsion testis, hernia, hydrocele, Vulval Synechiae	General Surgery	Horizontal
10	Discuss the role of Child Guidance clinic in children with Developmental problems	Psychiatry	Horizontal

D. Clinical posting (6th & 7th Semester): 4 weeks

Specific Learning Objectives (Skills)

1. Take a detailed Pediatric history.
2. Conduct physical examination of children.
3. Perform anthropometry and interpret growth of the child.
4. Developmental assessment of a child.
5. Distinguish between normal newborns and those requiring special care (including low birth weight and preterms).
6. Care of newborn at birth and lying in ward.
7. Counseling for breastfeeding/infant feeding
8. Take detailed pediatric history, conduct an appropriate physical and developmental examination of children including neonates, make clinical diagnosis, conduct common bedside procedures (peripheral smear, hemoglobin, urine and stool examination, CSF examination by microscope), interpret common laboratory investigations and plan and institute therapy.
9. Recognize emergencies including neonatal resuscitation and CPR and care to be instituted and relevant procedures performed.
10. Prepare oral rehydration solution, perform tuberculin test and administer vaccines.
11. Observation of diagnostic and therapeutic procedures such as intravenous access, nasogastric feeding, venesection, pleural and ascitic tap, bone marrow aspiration, lumbar puncture, liver and kidney biopsy

Clinical posting topics 6th , 7th semesters

1.	History Taking	- Practice
2.	General Examination	– Practice
3.	Developmental assessment	- Practice
4.	H/E of normal newborn	- Practice
5.	H/E of high risk newborn	- Practice
6.	Breast feeding	- History taking
7.	Neonatal resuscitation	- Workshop
8.	Neonatal resuscitation	- Workshop
9.	Respiratory system –	History Taking & Examination
10.	Respiratory system –	History Taking & Examination Practice
11.	CVS	– History Taking & Examination
12.	CVS	– History Taking & Examination Practice
13.	P/A	– History Taking & Examination
14.	P/A	– History Taking & Examination Practice
15.	CNS	- History Taking & Higher functions
16.	CNS	- Cranial Nerves
17.	CNS	- Motor system
18.	CNS	- Sensory system
19.	Pediatric code blue	- Workshop
20.	Pediatric code blue	- Workshop
21.	Case presentation	- Practice
22.	Case presentation	- Practice
23.	Case presentation	- Practice
24.	Case presentation	- Practice
25.	Case presentation	- Practice
26.	Case presentation	- Practice
27.	Part Completion Exam	

Pediatric Training during 8th & 9th semesters

Learning Objectives

- *8th/9th Semester:* Diseases in childhood— diagnosis and management

A. Theory classes (8th & 9th Semester) (20 hrs)

21. Hemolytic anemia & Sickle cell anemia
22. Thalassemia
23. Coagulation disorders–hemophilia
24. Bleeding and ITP
25. Leukemias
26. Other childhood malignancies (neuroblastoma, Wilms tumor, lymphoma)
27. Acyanotic congenital heart diseases and Congestive heart failure
28. Cyanotic Congenital heart disease.
29. Acute Rheumatic Fever and Infective endocarditis
30. Acute liver failure & hepatitis
31. Febrile seizures & Seizure disorders
32. Cerebral palsy
33. Intellectual Disability
34. Childhood tuberculosis.
35. Common exanthematous illnesses.
36. Meningitis.
37. Diphtheria, pertussis and tetanus
38. Enteric fever
39. Common childhood poisonings.
40. Chromosomal anomalies

B. Tutorials/Seminar (8th & 9th Semester) (25 hrs)

1. Approach to anemia
2. Micronutrients in Health and disease (Iodine, Calcium, Magnesium)
3. Acute Flaccid Paralysis
4. Floppy infant & Muscular dystrophies
5. Infantile hemiplegia
6. Developmental Delay
7. Short stature
8. Chronic liver disease
9. Status epilepticus
10. Unconscious / Comatose child
11. Assessment of an unresponsive child
12. Physiology of chest compressions and methods to ensure high quality chest compressions
13. Physiology of rescue breaths and methods to ensure effective rescue breaths
14. Identification and management of partial and complete airway obstruction in infants and children
15. Recognition of a sick child
16. Airway assessment and management- what are the options available?
17. Respiratory assessment and management- what are the options available?
18. Circulatory assessment and management- what are the options available?
19. Common cardiac rhythm disturbances in children and their identification and management
20. Integrated assessment and management of a child with a respiratory problem
21. Integrated assessment and management of a child with a circulatory problem
22. Integrated assessment and management of a child with a cardiac problem

23. Communication with parent of critically ill child, Consent, ER responsibilities How to break a bad news?
24. What are the attributes of an ideal team?
25. Post resuscitation management to ensure intact neurological survival

C. Integrated sessions (8th & 9th Semester) (10 hrs)

8th Semester			
1	Discuss the etio-pathogenesis, clinical features and management of Naso pharyngitis & Pharyngo Tonsillitis	ENT	Vertical
2	Discuss the etio-pathogenesis, clinical features and management of Acute Otitis Media (AOM) Describe the etio-pathogenesis, management and prevention of Allergic Rhinitis in Children	ENT	Vertical
3	Discuss the etio-pathogenesis, clinical features and management of Epiglottitis Discuss the etio-pathogenesis, clinical features and management of Acute laryngo-trachea-bronchitis	ENT	Vertical
4	Discuss the etiology, clinical features and management of Stridor in children	ENT	Vertical
5	Discuss the various regimens for management of Tuberculosis as per National Guidelines	Microbiology, Community Medicine, Pharmacology, Respiratory Medicine	Vertical & Horizontal
6	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	Microbiology, Community Medicine, Pharmacology, Respiratory Medicine	Vertical & Horizontal
7	Discuss modes of transmission, clinical presentation and management of pediatric HIV infection	Microbiology, Community Medicine, Pharmacology	Vertical & Horizontal
8	Discuss prevention of parent to child transmission of HIV (PPTCT)	OBGY	Horizontal
9	Discuss clinical features and management of hydrocephalus and neural tube defects	General Surgery, Neurosurgery	Horizontal
10	Approach to a child with headache	Ophthalmology, ENT, General Surgery; Psychiatry	Vertical & Horizontal

D. Clinical posting (6th & 7th Semester): 4 weeks

Objectives: Develop pattern recognition skills, plan appropriate investigations & treatment and counsel

S.No	Topic
1.	Pneumonia / Bronchiolitis
2.	Pleural effusion / empyema
3.	Generalized lymphadenopathy
4.	Approach to cough & Dyspnoea
5.	Asthmatic bronchitis
6.	Musculoskelatal disorders (arthritis)
7.	Hemiplegia
8.	Rheumatic Heart Disease

9. Congenital acyanotic Heart Disease
10. Congenital cyanotic Heart Disease
11. Intellectual Disability
12. Epilepsy
13. Approach to Anemia + Nutritional Anemia
14. Sickle Cell Disease Thalassaemia
15. Approach to hepato splenomegaly
16. Approach to Generalised edema/ Nephrotic syndrome
17. Malnutrition – Nutritional Requirements
18. Rickets / Scurvy /Vit A Deficiencies(specific Nutritional deficiency)
19. Short stature / failure to thrive
20. Cerebral palsy
21. Acute G.E with/without dehydration
22. Fever with rash – approach
23. Down's syndrome
24. Prematurity & IUGR
25. Neonatal Jaundice
26. Part Completion Exam

PEDIATRICS

ASSESSMENT AND DISTRIBUTION OF MARKS

Final Professional Examination

Theory paper

Duration of the theory paper shall be 3 hours. Total marks in final examination shall be 50. The theory paper will have 10 short notes, which will be divided into two sections A and B. Section A will have 5 short notes and section B will have 5 short notes. Both sections have to be answered on separate sheets. The content for these short notes will be divided as:

Section A:

- Short notes (2-3): Mortality indices and National programmes, Growth and development, Nutrition and Immunization
- Short notes (2-3): Neonatology

Section B:

- Short notes (5): Emergencies and Systemic Pediatrics

Section A will have 5 short notes and will be set and evaluated by the external examiner The duration of this section will be 90 minutes.

Section B will have 5 short notes and will be set and evaluated by the internal examiner. The duration of this section will be 90 minutes.

Practical

Total marks in final examination shall be 50.

The practical examination will be held over 2 to 4 days, 25 students each day.

1. Long case 20 marks
2. Short case 10 marks
3. Newborn viva 10 marks
4. Viva voce 10 marks

   (Growth cards, nutrition tray, emergency drugs, instruments, x ray)

The division of marks for the subject of Pediatrics in the Final Professional examination will be as follows:

Total marks	100
Theory	50
Practical	50

Pre-Professional Examination:

The pattern will be similar to final Professional Examination. 25 Points will be given to Pre professional examination for Internal assessment calculation.

Internal Assessment (IA) Examination:

There will be 3 Internal assessment examinations at the end of fourth, sixth and eighth semester.

The marks obtained in IA exams and Pre Professional will be converted in proportionate points.

Theory marks:

1.	Total for internal assessment points	**25**
	IV semester	-
	VI semester	10
	VIII semester	15
2.	Pre-professional assessment points	**25**
3.	Final internal assessment points	**50**

Practical marks:

1.	Total for internal assessment points	**25**
	IV semester	7.5
	VI semester	7.5
	VIII semester	10
2.	Pre-professional assessment points	**25**
3.	Final internal assessment points	**50**

Examination calendar

INTERNAL ASSESSMENT		Theory marks	Th. IA points	Practical marks	Pract. IA points	Theory paper pattern (Template)
1	1st IA exam (Forth Sem)	-	-	50	7.5	
2	2st IA exam (Sixth Sem)	50	10	50	7.5	28 MCQs (0.5 marks each = 14 Marks) 6 SAQs (3 marks each = 18 Ms) 2 structured LAQ (9marks each = 18 marks)
3	3rd IA exam (Eighth Sem)	50	15	50	10	28 MCQs (0.5 marks each = 14 Marks) 6 SAQs (3 marks each = 18 Ms) 2 structured LAQ (9marks each = 18 marks)
50% weightage of IA to be given to the total of above 3 exams.			**25**		**25**	
4	Pre-professional exam	50	**25**	50	**25**	28 MCQs (0.5 marks each = 14 Marks) 6 SAQs (3 marks each = 18 Ms) 2 structured LAQ (9marks each = 18 marks)
50% weightage of IA to be given to the Pre professional exam.			**25**		**25**	
Total for Internal Assessment			**50**		**50**	Eligibility for Professional exam: at least 25 points in theory and 25 points in practical
PROFESSIONAL EXAM		50	**50**	50	**50**	10 short notes of 5 marks each. Divided into two sections A and B. Section A - 5 short notes Section B - 5 short notes.
	GRAND SUBJECT TOTAL		**100**		**100**	**Passing marks: 50 % each in theory & practicals**

Pediatric list of contents modules and their weightage

Sr. No.	Content areas	Area Weightage
1	Growth	Core
2	Development	Core
3	Behavioral	Desirable
4	Childhood disabilities	Desirable
5	Nutrition	Core
6	Fluid Electrolytes	Core
7	Genetics	Desirable
8	Neonatology	Core & Desirable
9	Immunology	Core & Desirable
10	Infections	Core & Desirable
11	GIT	Core & Desirable
12	RS	Core
13	CVS	Desirable
14	Hematology	Core & Desirable
15	Malignancy	Good to know
16	Nephrology	Desirable
17	Urology	Good to know
18	Endocrine	Desirable& Good to know
19	CNS	Core & Desirable
20	Eye	Desirable& Good to know
21	Ear	Desirable & Good to know
22	Bone & Joints	Desirable & Good to know

Blue Print for Internal Assessment Exams

K- Knowledge, U- Understanding, A- Application

MCQ- Multiple Choice Question, SAQ- Short Answer Question, LAQ- Long Answer Question.

Total number of Questions	**36**	**MCQ 28**			**SAQ 6**			**LAQ 2**		
1. Core (Must know) 70% of total number of questions	**25**	K	U	A	K	U	A	K	U	A
70% of core will be Knowledge based	17	16			0			1		
20% of core will be Understanding based	5		3			1			1	
10 % of core will be based on application	3			2			1			0
2. Desirable to know 20% of total number of questions	**7**	K	U	A	K	U	A	K	U	A
70% of desirable will be Knowledge based	4	2			2			0		
20% of desirable will be Understanding based	2		1			1			0	
10 % of desirable will be based on application	1			0			1			0
3. Good to know 10% of total number of questions	**4**	K	U	A	K	U	A	K	U	A
100% of good to know will be Knowledge based	4	4			0			0		
0% of good to know will be Understanding based	0		0			0			0	
0 % of good to know will be based on application	0			0			0			0

List of certifiable competencies for sixth/seventh semester

Sr No	Competency The students should be able to…	Attempts taken for successful completion	Date of successful completion	Teacher Name and Signature
1	Demonstrate the steps of inserting an IV cannula in a model			
2	Demonstrate the steps of inserting an introsseous line in a mannequin			
3	Demonstrate the correct administration of different vaccines in a mannequin Practice Infection control measures and appropriate handling of the sharps			
4	Perform NG tube insertion in a manikin			
5	Perform Neonatal resuscitation in a manikin			
6	Provide BLS for children in manikin			
7	Assessment, classification and Management of young infants <2 months according to IMNCI guidelines			
8	Assessment, classification and Management of manage children > 2 months up to 5 years according to IMNCI guidelines			

Skills Lab activities for sixth/seventh semester

Sr No	Competency The students should be able to…	Attempts taken for successful completion	Date of successful completion	Teacher Name and Signature
1	Demonstrate the steps of inserting an IV cannula in a model			
2	Demonstrate the steps of inserting an intersseous line in a mannequin			
3	Demonstrate the correct administration of different vaccines in a mannequin Practice Infection control measures and appropriate handling of the sharps			
4	Perform NG tube insertion in a manikin			
5	Perform Neonatal resuscitation in a manikin			
6	Provide BLS for children in manikin			

List of certifiable competencies for Eighth/Ninth semester

Sr No	Competency The students should be able to…	Attempts taken for successful completion	Date of successful completion	Teacher Name and Signature
1	Assess and Manage Airway and Breathing- Recognize respiratory distress Administer oxygen using correct technique and appropriate flow rate			
2	Assess and Manage Airway and Breathing- Recognize airway problem and manage by simple maneuvers like positioning OR airway adjuncts			
3	Assess and Manage Airway and Breathing- Recognize respiratory failure Perform assisted ventilation by Bag and mask in a simulated environment			
4	Assess and Manage Circulation- Recognize shock Secure IV/IO access and start resuscitation fluid			
5	Assess level of consciousness & provide emergency treatment to a child with convulsions/ coma -Position an unconscious child -Position a child with suspected trauma -Administer IV/per rectal Diazepam for a convulsing child in a simulated environment			

Skills Lab activities for Eighth/Ninth semester

Sr No	Competency The students should be able to…	Attempts taken for successful completion	Date of successful completion	Teacher Name and Signature
1	Demonstrate the technique of liver biopsy in a perform Liver Biopsy in a simulated environment			
2	Assess and Manage Airway and Breathing- Recognize respiratory distress Administer oxygen using correct technique and appropriate flow rate			
3	Assess and Manage Airway and Breathing- Recognize airway problem and manage by simple maneuvers like positioning OR airway adjuncts			
4	Assess and Manage Airway and Breathing- Recognize respiratory failure Perform assisted ventilation by Bag and mask in a simulated environment			
5	Assess and Manage Circulation- Recognize shock Secure IV/IO access and start resuscitation fluid			
6	Assess level of consciousness & provide emergency treatment to a child with convulsions/ coma -Position an unconscious child -Position a child with suspected trauma -Administer IV/per rectal Diazepam for a convulsing child in			

	a simulated environment			
7	Demonstrate performance of bone marrow aspiration in manikin			
8	Perform in a mannequin lumbar puncture. Discuss the indications, contraindication of the procedure			

List of books

SR. NO.	SUGGESTED READING BOOKS UNDERGRADUATES	AUTHOR	PUBLISHER
1	Clinical Methods in Pediatrics. Revised third Edition	Piyush Gupta.	CBS
2	Care of Newborrn. Revised Eighth edition	Meherban Singh	CBS
3	Ghai Essential Pediatrics	Vinod K Paul Arvind bagga	CBS
4	Textbook of Pediatrics	Piyush Gupta	CBS
SR. NO.	**SUGGESTED REFERENCE READING BOOKS UNDERGRADUATES**	**AUTHOR**	**PUBLISHER**
1	THE HARRIET LANE HANDBOOK: FIRST SOUTH ASIA EDITION	CAMERON, JOHN L. , KAHL, LAUREN, HUGHES, HELEN K.	ELSVIER
2	NELSON PEDIATRIC SYMPTOM-BASED DIAGNOSIS, 1ST EDITION	KLIEGMAN	ELSVIER
3	NELSON TEXTBOOK OF PEDIATRICS, INTERNATIONAL EDITION: 2-VOLUME SET. 21ST EDITION	KLIEGMAN	ELSVIER
4	PARK'S PEDIATRIC CARDIOLOGY FOR PRACTITIONERS, 6TH EDITION.	MYUNG PARK	ELSVIER
5	ROGERS TEXTBOOK OF PEDIATRIC INTENSIVE CARE. ED. DAVID G NOCHOLS. 5TH EDITION.	ROGER ED. DAVID G NOCHOLS	ELSEVIER
6	MANUAL OF PAEDIATRIC EMERGENCIES & CRITIAL CARE	SUCHITRA RANJIT	PARAS MEDICAL PUBLISHER
7	NUTRITION & CHILD DEVELOMENT (FULL COLOR)	ELIZABETH KE	PARAS MEDICAL PUBLISHER
8	SMITH'S RECOGNIZABLE PATTERNS OF HUMAN MALFORMATION: EXPERT CONSULT - ONLINE AND PRINT, 7TH EDITION	JONES	ELSEVIER
9	BREASTFEEDING: A GUIDE FOR THE MEDICAL PROFESSION, 8TH EDITION	LAWRENCE	ELSEVIER
10	FANAROFF AND MARTIN'S NEONATAL-PERINATAL MEDICINE, 2-VOLUME SET: DISEASES OF THE FETUS AND INFANT (EXPERT CONSULT - ONLINE AND PRINT), 10TH EDITION	MARTIN	ELSEVIER
11	FORFAR & ARNEIL TEXTBOOK OF PEDIATRICS, INTERNATIONAL EDITION: 7TH EDITION	McINTOSH	CLOUDTAIL INDIA

12	HOW TO READ PEDIATRIC ECGS, 4TH EDITION	PARK	MOSBY ELSEVIER
13	AIIMS PROTOCOLS IN NEONATOLOGY, 2 VOLUME SET	AGARWAL	NOBLE
14	GHAI ESSENTIAL PEDIATRICS, 9TH EDITION (HB)	PAUL VK	CBS PUBLISHERS
15	CARE OF THE NEWBORN MEHARBAN SINGH – 8TH EDITION	MEHARBAN SINGH	CBS
16	CLINICAL PEDIATRICS NEUROLOGY - FENICHEL G.M	J. ERIC PIÑA-GARZA	W.B. SAUNDERS AND CO.
17	CLOHERTY AND STARKS MANUAL OF NEONATAL CARE	EICHENWALD E.C ; HANSEN A.R	WOLTERS KLUWER
18	THE DEVELOPMENT OF THE INFANT AND YOUNG CHILD : NORMAL AND ABNORMAL: 10TH EDITION	ILLINGWORTH R.	CHURCHILL LIVINGSTONE
19	ILLINGWORTHS' DEVELOPMENT OF THE INFANT AND THE YOUNG CHILD (ADAPTATION): 10TH EDITION	ILLINGWORTH R.	CHURCHILL LIVINGSTONE
20	THE NORMAL CHILD SOME PROBLEMS OF THE EARLY YEARS AND THEIR TREATMENT – 10TH EDITION	ILLINGWORTH R.	B.I. CHURCHILL LIVINGSTONE