WEST BENGAL UNIVERSITY OF HEALTH SCIENCES

CURRICULUM
OF
PAEDIATRICS including NEONATOLOGY

The course includes systemic instructions in growth and development, nutritional needs of a child, immunization schedules and management of common diseases of infancy and childhood, scope of Social Pediatrics and counseling.

GOAL:
The broad goal of the teaching of undergraduate students in Pediatrics is to acquire adequate knowledge and appropriate skill for optimally dealing with major health problems of children to ensure their optimal growth and development.

A. OBJECTIVES:

1. KNOWLEDGE – At the end of the course students will be able to:

   a) describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations thereof.

   b) describe the common paediatric disorders and emergencies in terms of epidemiology, aetiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation.

   c) state age related requirements of calories, fluids, nutrients, drugs etc. in health and disease.

   d) describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisoning, accidents and child abuse.

   e) outline national programmes relating to child health including immunization programmes.

2. SKILL: At the end of the course the students will be able to:

   a) take a detailed paediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common laboratory investigation results, and plan and institute therapy.

   b) take anthropometrics measurements, resuscitate newborn infants at birth, prepare ORS, perform tuberculin test, administer vaccines available under current national programme, perform venesection, provide nasogastric feeding, and start an I/V fluid etc.
c) conduct diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspirations, pleural and ascitic tap.

d) distinguish between normal newborn babies and those requiring special care, and institute early care to all newborn babies including care of preterm and low birth weight babies, provide guidance and counselling in breast feeding.

e) provide ambulatory care for all sick children, identify indications for specialized/in-patient care and ensure timely referral for those who require hospitalization.

3. INTEGRATION:

The training in Pediatrics should prepare the students to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of a team in an integrated form with other disciplines, e.g. Anatomy, Physiology, Biochemistry, Microbiology, Pathology, Pharmacology, Forensic Medicine, Community Medicine, Physical Medicine and rehabilitation.

SYLLABUS OF PAEDIATRICS including NEONATOLOGY

COURSE SCHEDULE:

GENERAL PAEDIATRICS

I Didactic teaching: 90 +10 hrs. in Neonatology = Total 100 hours.

| Lectures | 30 in no. | 1 hour each.
| Seminars | 10 in no. | 2 hours each.
| Demonstration | 20 in no. | 2 hours each.

II Clinical / Practical:

Clinical postings:
- 4th. Semester: 2 weeks
- 6th. Semester: 2 weeks
- 7th. Semester: 2 weeks
- 8th. Semester: 4 weeks.

Total: 10 weeks.

5-6 days a week: 3 hours daily.

NEONATOLOGY

I Didactic teaching:

| Lectures | 10 in no. | 1 hour each.

II Clinical / Practical:

In 8th. Semester: 10 classes: 3 hours each.
CONTENTS

1. Growth and Development :
   a) Definitions, determinants of growth and assessment of growth, concept of percentiles.
   b) Growth & sexual development during childhood and adolescence, anthropometry, velocity of growth, growth monitoring, road to health, deviation from normal.
   c) Development of milestones, determinants of normal development and factors affecting development.
   d) Assessment of development- gross motor, fine motor, language, social/adaptive, concept of DQ.
   e) Approach to a child with failure to thrive, growth retardation, short stature, obesity.

   a) Age related requirements of calories, nutrients, vitamins, minerals, trace elements.
   b) Feeding – normal/during illness, weaning.
   c) PEM – diagnosis, growth charts, clinical features, complications, management.
   e) Nutritional anaemia in infancy and childhood.

3. Immunisations: UIP, EPI, contra indications /adverse reactions to vaccines, cold chain, pulse polio.

4. Fluid and electrolyte – Pathophysiology and principle of management.

5. Infections diseases.
   a) Common childhood exanthematous illnesses e.g. measles, chicken pox.
   b) Mumps, Whooping cough.
   c) Typhoid, Diphtheria, Tuberculosis – pulmonary and extra- pulmonary.
   d) Parasitic infestations e.g. Malaria, Kalazar, amoebic dysentery, giardiasis.
   e) Childhood AIDS.

6. Respiratory system.
   a) AURI - Common cold, Otitis media, pharyngitis, croup.
   b) ALRI - Pneumonia / Bronchiolitis.
   c) Bronchial asthma.
7. **Cardiovascular system:**
   
   a) Congestive cardiac failure – cause, diagnosis, management.
   b) Congenital heart diseases – acyanotic /cyanotic.
   c) Rheumatic fever and rheumatic heart disease.

8. **Genitourinary system:**
   
   a) Acute post-streptococcal glomerulonephritis.
   b) Nephrotic syndrome.
   c) Urinary tract infection.
   d) Childhood hypertension

9. **GI system:**
   
   a) Acute diarrhoea /dysentery – etiology, pathophysiology, C.F., management.
   b) Persistent diarrhoea.
   c) Jaundice in childhood.
   d) Cirrhosis of liver.

10. **Haemato-oncology:**
    
    b) Thalassaemias.
    c) Acute Leukaemia, lymphoma.
    d) Hemophilia / ITP.

11. **CNS disorders:**
    
    a) Meningitis – Tubercular, Bacterial, viral.
    b) Encephalitis.
    c) Cerebral palsy- aetiology, diagnosis, prevention, treatment.
    d) Mental retardation-  
    e) Hydrocephalus, microcephaly.
    f) Acute ant poliomyelitis, GB syndrome.

12. **Endocrine system:**
    
    a) Cretinism– early diagnosis, management.
    b) Juvinile diabètes mellitus.

Lectures : 30 (Thirty)

1. Growth and development.
3. Bronchial asthma.
4. Pulmonary and extra pulmonary TB.
5. Pneumonia / Bronchiolitis.
6. Rheumatic fever and rheumatic heart disease.
7. Congenital heart disease – acynotic (VSD) / cyanotic (Fallot’s).
9. Cerebral palsy
10. Convulsive disorders
11. Diarrhoea / dysentery, dehydration, malabsorption.
13. I. C. C.
14. Parasitic infest.-malaria, kalazar
15. Failure to thrive.
17. AGN / nephrotic sytrome.
18. UTI, childhood hypertension.
20. Hypothyroidism, Down syndrome.
22. Acute leukaemia / lymphoma.
23. Poliomyelitis.
24. JRA
27. Fluid electrolytes.
28. Childhood AIDS
29. National programme related to RCH / ICDS.
30. Acute Febrile illnesses with exanthems.

SEMINARS :

1. PEM
2. Immunization
4. ARI
5. Shock
6. Heart failure
7. Convulsions
8. Bleeding
9. Jaundice
10. Coma
**DEMONSTRATION:**

1. Paediatric history taking including dietary history
2. Anthropometry
3. Development assessment
5. Common X-rays.
6. Treatment of diarrhoea – ORS therapy
7. Procedures – LP, bone marrow aspirations, venous blood sampling, pleural tap, ascitic tap, liver biopsy.
8. IV line with fluid therapy.
9. MT, BCG vaccination.
11. Cardiopulmonary resuscitation.
12. Drug dosage.
13. Nebuliser therapy
15. Feeding normal newborn, LBW and in diseased state.
16. Handling paediatric emergencies under supervision- status asthmaticus/cyanotic spell.
17. A.F.P. Stool collection, storage, referral.
18. Vaccinations-storage, maintenance of cold chain.
19. Health education talks in small groups – Neonatal / breast feeding / home care during diarrhoea and ARI.

**NEONATOLOGY COMPONENT**

**AIM:**

To acquire competence to promote rational care of normal neonates and to undertake appropriate management of at risk and sick neonates.

Primary objectives:

At the end of training undergraduate Medical students will be able to:-
1. resuscitate newborn at birth.
2. identify at risk/sick neonates and decide required level of care.
3. provide care to normal newborn.
4. diagnose and manage common neonatal problems.
5. impart health education to mother and the family regarding care of neonates with birth spacing.
6. promote breast feeding, impart lactation management and feeding.
7. learn specific neonatal procedures.
8. interpret reports of investigations.
9. maintain neonatal case record and use basic neonatal equipments.
10. implementation of national programmes aimed at newborn.
SYLLABUS

LECTURES: (10)

2. Care of the normal newborn, natural phenomena of neonates.
3. LBW – etiology, complications, management.
5. Fluid and nutrition therapy. Hypothermia of neonates.
6. Infection.
7. Jaundice
8. Respiratory distress.
9. CNS (asphyxia and seizure) and metabolic problems (hypoglycaemia etc.)
10. Miscellaneous:
    a) Congenital malformations and common surgical problem.
       - External-meningomyelocel TEV/Cleft lip palate, CDR. Internal Esophageal atresia and fistula, diaphragmatic hernia, anal atresia, congenital heart disease.
    b) Birth trauma - Caput, cephalhematoma, brachial plexus injury, fracture of clavicle & other long bones, intracranial haemorrhage.

CLINICAL:

1. History taking- relevant to making diagnosis and relating to antenatal, natal, neonatal and family history from parents.
2. Clinical examination to normal newborn:
   i) Anthropometry
   ii) Identification of common malformations and birth trauma
   iii) Neonatal reflexes
   iv) Vital signs -breathing, heart rate, perfusion, temp.recording.
   v) Some normal phenomena -physiological jaundice, erythema toxicum, Mongolian spot, epstein pearls, skin-hemangiomias, breast enlargement, withdrawal vaginal bleeding, non-retractile prepuce, subconjunctival haemorrhage, caput, cephalhaematoma, watering of eyes, sleep pattern, maconium passage, transitional stool, vomiting, urine passage, etc.
   vi) Systemic examinations.
3. Clinical examination of LBW and sick newborn and their management.
   i) Gestational age assessment,
   ii) Abnormal signs e.g. cold stress, hypothermia, CGT, poor pulse, apnoea, chest retraction, grunting, sclerema, abnormal fontanelle, abnormal cry, poor activities, cyanosis, abnormal umbilical stump, abdominal distension, abnormal sensorium, seizures, jitteriness, neonatal jaundice.
   iii) Levels of neonatal care with elements of service.
4. Diagnosis and management of common neonatal problems:
   i) Infection
   ii) Jaundice
   iii) Respiratory distress
   iv) Convulsions
   v) Bleeding
   vi) Common malformations.

5. Breast feeding and lactation management:

6. Equipments demonstration-- (phototherapy unit, radiant warmer, incubator, oxygen hood, infantometer, pulse oxymeter etc.)

**PRACTICAL** : (with manikin) NEONATAL RESUSCITATION - one full session of demonstration, then assisted practice, & finally independent practice.

**EVALUATION SCHEME**

**INTERNAL ASSESSMENT** - 20 MARKS

**Continuous internal assessment**:

- Theory & oral = 5 marks
- Clinical / practical = 5 marks

-------------------------------
Total = 10 marks

**Final internal assessment**:

- Theory & oral = 5 marks
- Clinical / practical = 5 marks

-------------------------------
Total = 10 marks

Thus, INTERNAL ASSESSMENT has two parts:

(i) Theory + oral = 5 (continuous I.A.) + 5 (final I.A.) = 10 marks.

Marks obtained out of 10 marks in each category of (i) and (ii) above, are to be added separately with the same category of marks obtained in University examination.

**FINAL UNIVERSITY EXAMINATION**

**THEORY** : Total marks = 40.

1. One question on basic science & allied subject = 10 marks.
2. Short answer type (two out of three) = 5 x 2 = 10 marks
3. Short notes (three out of four) = 4 x 3 = 12 marks.
4. Short problem based question = 8 marks

**ORAL** : 10 marks

1. X-rays (Paediatric), other images (CT, USG, MRI) = 5 marks
2. ECG, charts, instruments = 5 marks
CLINICAL / PRACTICAL : 30 marks.
1. One long case = 20 marks
2. One short case = 10 marks

* In Theory + Oral & Clinical / Practical parts of examn. – approx. 25 % of the marks should be allotted to Neonatology part.

Thus, University Exam. – Theory (40 marks) + Oral (10 marks)
Internal Assessment – Theory & Oral – 10 marks

---------------------------------------------
Total Theory + Oral = 60 marks.

University Exam. - Clinical / Practical = 30 marks
Internal assessment - Clinical / Practical = 10 marks

---------------------------------------------
Total Clinical / Practical = 40 marks

GRAND TOTAL = 100 MARKS.

CONTINUOUS INTERNAL ASSESSMENT CARD

THEORY / ORAL

<table>
<thead>
<tr>
<th>Semester</th>
<th>Lectures / seminars held</th>
<th>Lectures/ seminars attended</th>
<th>SEMESTER TESTS</th>
<th>FULL MARKS</th>
<th>MARKS OBTAINED</th>
<th>Signature of the teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 th.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 th.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 th.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 th.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ATTENDANCE -----------%  Marks =  
Conversion out of 5 =

CLINICAL / PRACTICAL

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>ITEMS</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical, Demonstration etc.</td>
<td></td>
<td>Full Marks</td>
</tr>
</tbody>
</table>

| 4 th. Semester | Classes held | Classes attended | 1. Paediatric history taking & general examination. |
|               |              |                  | 2. Assessment of growth & development & nutrition |

% attendance  TOTAL
<table>
<thead>
<tr>
<th>6th semester</th>
<th>ITEMS</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classes held =</td>
<td>3. G.I. system including Liver diseases.</td>
<td></td>
</tr>
<tr>
<td>Classes attended =</td>
<td>4. Genito-urinary system</td>
<td></td>
</tr>
<tr>
<td>% attendance</td>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7th semester</th>
<th>ITEMS</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classes held =</td>
<td>5. Respiratory system</td>
<td></td>
</tr>
<tr>
<td>Classes attended =</td>
<td>6. Cardiovascular system</td>
<td></td>
</tr>
<tr>
<td>% attendance</td>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8th semester</th>
<th>ITEMS</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classes held =</td>
<td>7. Haemopoietic system</td>
<td></td>
</tr>
<tr>
<td>Classes attended =</td>
<td>8. Nervous system</td>
<td></td>
</tr>
<tr>
<td>[% attendance</td>
<td>9. Newborn</td>
<td></td>
</tr>
<tr>
<td>% attendance</td>
<td>10. Miscellaneous</td>
<td></td>
</tr>
</tbody>
</table>

Total marks in items = Total marks obtained = Conversion out of 5 =

Signature of Head of the Department.
WEST BENGAL UNIVERSITY OF HEALTH SCIENCES
Model Question paper
(Theory)

PAEDIATRICS including Neonatology

Full Marks – 40.                                                                                Time – 2 hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own as far as practicable.

1. Name the aetiopathogens for acute gastroenteritis in children.
   Give an outline of the effects of acute diarrhoea on water, electrolyte, and acid-base balance of the body.

2. Answer any two :-
   a) Outline differential diagnosis of Acute Flaccid Paralysis in a 2-yr. old child.
   b) Write the developmental milestones of a 10 month old baby.
   c) Briefly write the differential diagnosis of jaundice in a 6- day old neonate.

3. Write short notes on:-( any three)
   a) Sepsis screen in neonate.
   b) Measles vaccine
   c) Mantoux test
   d) Complications of nephrotic syndrome.

3. A 2- year old child has presented with fever, severe pallor, hepatosplenomegaly and purpuric spots all over the body. Write the differential diagnosis. Suggest the investigations to reach the final diagnosis.