

# STUDY GUIDE OF PEDIATRICS

## MBBS COURSE

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# INTRODUCTION

## EDUCATIONAL HOURS

<b>PEDIATRICS</b>			
<b>Year</b>	<b>Theory</b>	<b>Practical</b>	<b>Total</b>
<b>4th year</b>	<b>50 hours</b>	<b>30 hours (4 week clinical rotation)</b>	<b>80</b>
<b>5th year</b>	<b>50 hours</b>	<b>70 (6 week clinical rotation)</b>	<b>120</b>
<b>Total</b>	<b>100 hours (36 weeks/year)</b>	<b>100 hours</b>	<b>200 hours</b>
<b>Strategy</b>	<b>Lectures Problem based learning Small group discussion Case based discussion</b>	<b>Clinical attachment Evening duties in wards Clinical skills laboratory Early clinical exposure</b>	

## LEARNING OUTCOMES

### AT THE END OF CURRICULUM STUDENT WILL BE ABLE TO

- Students will demonstrate his ability to obtain a relevant clinical history from a parent or an older child.
- Student will demonstrate his ability to perform adequate clinical examination of a child of any age (including newborn).
- Student will be able to interpret clinical and laboratory data to arrive at a diagnosis.
- Student will be able to advise appropriate nutritional measures for healthy and sick children (Breast feeding, avoidance of bottle, proper weaning)
- Student will be able to counsel the parents on health promotive and disease preventive strategies for the child e.g. immunization procedures; hand washing)
- Student will be able to recognize and manage common health problems of children.
- Student will recognize the danger signs of disease in children and be able to appropriately refer children with severe disease to appropriate specialists/hospitals.
- Student will demonstrate his ability to perform essential clinical procedures relevant to children e.g.
  - Resuscitation of newborn.
  - Basic cardio-pulmonary resuscitation.
  - Anthropometric measurements.
  - Measuring blood pressure
  - Starting intravenous lines/ draw blood sample
  - Administration of oxygen therapy
  - Giving nebulizer therapy [bronchodilator]
  - Use of growth chart

# EDUCATION STRATEGIES

The educational strategies in this curriculum are multiple and aligned with domain of learning and according to the desired outcome

## **Interactive lectures**

One-third of the curriculum will be delivered in a traditional didactic format including PowerPoint presentations and case discussions. Didactic education is considered to be a one-way transmission of material from teacher to learner, we cannot overlook the possibility of meaningful interaction between experts and learners during live lectures. This type of interaction, which allows for immediate clarification of concepts and extension of knowledge, may be particularly important for novice learners who have relatively little exposure to the subject matter, such as our study population(4).

## **Case based Discussion**

A lot of emphasis is on case based discussion during ward placement. Problem-based learning (PBL) is complex and heterogeneous. A wide variety of educational methods are referred as PBL. These include Lecture-based case, Case based lecture, Case based discussions, Problem or inquiry based and Closed loop or reiterative. Incorporation of case based discussion in teaching enhances the critical thinking and problem-solving skills. It also helps in developing a broader prospective of clinical case scenarios (5).

## **Small Group Discussion**

Small group discussion provides a unique environment to achieve high standards in medical education. Activation of prior knowledge, exchange of ideas, and engagement at a higher cognitive level are assumed to result in deeper learning and better academic achievements by students (6).

## **Clinical Skills Sessions**

Clinical skills session are important part of curriculum to achieve psychomotor and affective outcomes. Learning manual skills is a fundamental part of health care education, and motor, sensory and cognitive learning processes are essential aspects of professional development. Simulator training has been shown to enhance factors that facilitate motor and cognitive learning. Students learned manual skills, how to perform the procedure, and professional behaviour. They learned by preparing, watching, practising and reflecting. The simulator contributed by providing opportunities for students to prepare for the skills training, to see anatomical structures, to feel resistance, and to become aware of their own performance ability (7).

# ASSESSMENT

## MCQ's and SEQ's

Multiple choice question and short essay question test will be used at the end of part of curriculum to assess the learning of knowledge. These all assessment exercises will be formative. The written tests like Multiple-Choice Questions (MCQs) and Short-Essay Questions (SEQs) test formats are used for the assessment of cognitive domain. The MCQs are more objective and essentially select type of item response format. MCQs have a cueing effect, which promotes guessing and leads to higher scores. In addition, writing MCQs of higher cognitive level of problem solving is challenging. On the contrary, the SEQs are more subjective and have a supply or construct type item response format, which does not have any cueing effect and can effectively assess problem solving skills(8).

## OSCE AND SHORT CASE

Short case and OSCE will be used to evaluate clinical skills and procedural skills at the ward end of placement. The OSCE is a method of clinical skill assessment, and it has been reported to be appropriate for assessing learning achievement levels in the psychomotor and emotional domains, which are difficult to evaluate with written examinations(9).

## CLINICAL LOG BOOK

Clinical log book is meant for self directed learning (SDL) and assessment of students. The clinical logbook includes reflection which helps the students to set educational goals.

## MINI-CEX

Mini-CEX is used to assess the clinical skills and problem solving skills of medical students. This is the tool used by clinical teachers. This can assess all three domains, Psychomotor, cognitive and affective. This also used as formative assessment.

### Evaluation plan

Each Module	Written test (MCQ and SEQ)	Formative
After ward placement	Ward test (OSCE and short case)	Formative
At end of 36 weeks	Send up exam (MCQ and SEQ) Viva voce	Formative
Annual	University Professional exam	Summative

## INTERNAL ASSESSMENT

- i. The weightage of internal assessment shall be 10% of totals marks.
- ii. Continuous internal assessment shall consist of evaluation at the end of each assignments, e.g. stages/sub-stage, class tests etc., attitudinal assessment from educational supervisors.
- iii. Assessment of knowledge, Skills and Attitude shall contribute toward internal assessment. Methods used to assess these domains shall include Multiple Choice Questions of one-best type, Short essay questions, Oral/Viva, and Practical/Clinical examinations.
- iv. The score of internal assessment shall contribute to the score in the final examination, Final university examination of each subject shall contribute 90 to total score, and the candidate shall pass in aggregate.
- v. Proper record of continuous internal assessment shall be maintained.

## **LEARNING RESOURCES**

The department of pediatrics will require following resources for implementation resources:

- Human resource
- Instructors (faculty members 8)
- Curriculum coordinator curriculum secretary
- Infrastructure
- Lecture hall with AV aids
- Tutorial room with AV aids
- Clinical skills Lab with manikins
- Simulated patients and simulated manikins
- Computers

## **LISTS OF CONTENT RESOURCES**

- Text book of paediatrics by Pervaiz Akbar
- Essentials of Paediatrics by Nelson. Latest Edition.
- Online Journals and Reading Materials through HEC Digital Library Facility

# CONTENTS MODULES

COURSE CONTENTS		
4th Year	1st Term	
	2nd Term	
	3rd Term	
Final Year	1st Term	
	2nd Term	
	3rd Term	

## IMPLEMENTATION

The curriculum will be spread over 2 year with 36 working weeks each year. During this period student will be exposed to various education strategies to achieve the learning objectives.

### 4th Year.

In this year student will be placed on ward attachments and clinical skills lab. formative assessment of clinical skills will be started.

Theory (Lecture, SGD and PBL)	Practical (Ward Placement, Skills lab)
50 Hours (36 Weeks)	30 Hours (4 Weeks)

### Final Year.

In this year student will be placed on ward attachments and clinical skills lab. All students will be assessed for knowledge and clinical skills during year. This year will have summative assessment as final professional at the end of year.

Theory (Lecture, SGD and PBL)	Practical (Ward Placement, Skills lab)
50 Hours (36 Weeks)	70 Hours (6 Weeks)

## FOURTH YEAR WARD ROTATION IN PEDIATRICS

Duration: 4 weeks (75 hours)

Location: ward, OPD, Tutorial room

Tutors: Assistant professor, associate Professor, Professor

	Ward	C	P	A	% age	Assessment
Week 1		C2 C2	P1 P1	A1 A1	15	Ward test Mini CEX OSPE
Week 2		C2 C2	P1 P1	A1 A1	15	Ward test Mini CEX OSPE
Week 3		C2 C2	P1 P1	A1 A1	15	Ward test Mini CEX OSPE
Week 4		C2 C2	P1 P1	A1 A1	15	Ward test Mini CEX OSPE

### Evaluation:

- Attendance of 75% is mandatory
- 15 clinical histories must be completed on history register
- Every Saturday will be formative assessment for course work of that week
- End of course work will be ward test
- Ward test will be OSPE and 2 short cases

## FINAL YEAR WARD ROTATION IN PEDIATRICS

Duration: 6 weeks (100 hours)

Location: Ward, OPD, Tutorial room

Tutors: Assistant Professor, Associate Professor, Professor

	Ward	C	P	A	% age	Assessment
Week 1		C2 C2 C3	P2 P2	A2 A2	15	Ward test Mini CEX OSPE
Week 2		C2 C2 C3	P2 P2	A2 A2	15	Ward test Mini CEX OSPE
Week 3		C2 C2 C3 C3	P2 P2	A2 A2	15	Ward test Mini CEX OSPE
Week 4		C2 C2 C3	P2 P2	A2 A2	15	Ward test Mini CEX OSPE
Week 5		C2 C2 C3	P2 P2	A2 A2	10	Ward test Mini CEX OSPE
Week 6		C2 C2 C3 C3	P2 P2	A2 A2	10	Ward test Mini CEX OSPE

### Evaluation:

- Attendance of 75% is mandatory
- 15 clinical histories must be completed on history register
- Every Saturday will be formative assessment for course work of that week
- End of course work will be ward test
- Ward test will be OSPE and 2 short cases

# PROGRAMME EVALUATION

## **Purpose of Evaluation**

The major goals of the evaluation are to provide information that the students can use to achieve curricular objectives and that the faculty can use to monitor quality of and improve curriculum.

## **Design of Evaluation**

The evaluation design as only posttest.

## **Users of evaluation: students, curriculum faculty, Principal Office**

Resources: Curriculum faculty and departmental secretaries. No additional funding

## **Evaluation question:**

- What percentage of students achieved 75% mandatory attendance?
- What percentage of students achieved pass marks in university exam?
- What are the strengths of the curriculum? What are the weaknesses? How can the curriculum can be improved?

Because of limited resources, the evaluation was kept simple. Data Collection was integrated into the curriculum schedule. The major goals of the evaluation are to provide information that the students can use to achieve curricular objectives and that the faculty can use to monitor quality of and improve curriculum. The evaluation design as only posttest.

## **End of curriculum evaluation form:**

This will be filled by students and faculty members for evaluation of adequacy with each content was covered, whether they would recommend the curriculum to others and written comments on curriculum strengths, weaknesses and suggestions for improvements.

## **Annual Report:**

Based on evaluation of the educational programe report will be generated annually and submitted to Medical Educational Department.

**TABLE OF SPECIFICATION****PEDIATRICS (MCQ's)**

No	Subject	MCQ's
1	Disorder of blood	4
2	Heart disease	4
3	Infectious Disease	5
4	Neurological Diseases	4
5	Disease of Gastrointestinal Tract and Liver	5
6	Respiratory Tract Disease	1
7	Oncological Disease in Children	1
8	Renal Disease	1
9	Rheumatic Disease	1
10	Endocrine problems	2
11	Neonatology	5
12	Immune Disease	2
13	Genetics	1
14	Muscellaneous Diseases	4
	Total	40

**TABLE OF SPECIFICATION****PEDIATRICS (Short Essay Questions)**

No	Subject	MCQ's
1	Endocrinology	1
2	Cardiology	2
3	Respiratory Disease (ARI)	1
4	Gastrointestinal Tract Disease (AWD)	1
5	Meningitis	1
6	Vaccinology - EPI Schedule	1
7	Oncology	1
8	Neurology	1
9	Nephrology	1
	Total	10

## TABLE OF SPECIFICATION FOR OSPE

OSPE	<p>TOTAL MARKS 70                  Total Station 15 (03 Rest Station)                  05 Marks at Statistics Station (08)                  08 Marks at Clinical Skills Station (02)                  07 Marks at Viva Station (02)</p>
Static Stations	<p>08                  1. Neonatology (compulsory)                  2. Respiratory (compulsory)                  3. GIT (compulsory)                  4. Nutrition (compulsory)                  5. CVS / Hematology                  (either one or both in combination)                  6. Nephrology / Endocrinology                  (either one or both in combination)                  7. CNS / Musculoskeletal / Genetics                  (either one or both / all three in combination)                  8. Preventive / Infectious Disease                  (either one or both in combination)</p>
Interactive / Observed Stations	<p>04 (Short cases; at least TWO)                  02 Stations on clinical skills                  02 Stations on viva voce based on Clinical Cases</p>

## FINAL PROFESSIONAL MARKING SCHEME

### Theory

	SEQ	MCQ	Int. Ass	Sub Total
Pediatrics	50	40	10	100

### Clinical

Long case X1 case	OSPE	Int. Ass	Sub total
20	70	10	100
			Total: 200

Contents	Objectives	Domain	Strategy	Assessment
<b>Module-1: Growth and Development</b>				
	<ul style="list-style-type: none"> <li>Common problems of children in Pakistan and statistics of Pakistani children.</li> <li>Growth and development.</li> <li>Expanded program of immunization (EPI) .newer vaccines.</li> <li>Genetics: patterns of inheritance, Down's syndrome.</li> </ul>	C3 C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-2: Infectious diseases</b>				
	<ul style="list-style-type: none"> <li>Common pediatric infections: measles, tetanus, polio, diphtheria, whooping cough, aids.</li> <li>Malaria, enteric fever, tuberculosis, chicken pox, common skin infections.</li> <li>Diarrheal diseases.</li> <li>Acute respiratory infections (ARI).</li> <li>IMCI (integrated management of childhood illness).</li> </ul>	C3 C3 C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-3: Neonatology</b>				
	<ul style="list-style-type: none"> <li>Resuscitation of new born, Care of normal new born.</li> <li>Birth asphyxia, premature and low birth weight babies</li> <li>Neonatal jaundice,</li> <li>Neonatal sepsis,</li> <li>Neonatal fits,</li> <li>Respiratory distress of new born,</li> <li>Common skin conditions of neonates</li> <li>Pyloric stenosis,</li> <li>Myelomeningocele, Hydrocephalus</li> <li>Common congenital abnormalities and birth trauma.</li> </ul>	C3 C3 C3 C3 C3 C3 C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ

Contents	Objectives	Do-main	Strategy	Assessment
<b>Module-4: Neurology</b>	<ul style="list-style-type: none"> <li>• Meningitis</li> <li>• Febrile</li> <li>• Convulsions</li> <li>• Epilepsy</li> <li>• Cerebral palsy</li> <li>• Mental handicap</li> <li>• Cerebral malaria</li> <li>• Encephalitis</li> </ul>	C3 C3 C3 C3 C3 C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-5: Cardiology</b>	<ul style="list-style-type: none"> <li>• Congenital heart diseases [VSD, PDA, TOF, ASD],</li> <li>• Rheumatic fever.</li> <li>• Congestive cardiac failure,</li> <li>• Clinical assessment of a cyanotic neonate/infant.</li> </ul>	C3 C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-6: Haematology</b>	<ul style="list-style-type: none"> <li>• Anaemias</li> <li>• Thalassemia</li> <li>• Leukemias</li> <li>• Bleeding disorders.</li> </ul>	C3 C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-7: Nephrology</b>	<ul style="list-style-type: none"> <li>• Nephrotic syndrome</li> <li>• Urinary tract infections</li> <li>• Acute glomerulonephritis</li> </ul>	C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-8: Endocrinology</b>	<ul style="list-style-type: none"> <li>• Hypothyroidism</li> <li>• Short stature</li> <li>• Diabetes</li> </ul>	C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-9: Pulmonology</b>	<ul style="list-style-type: none"> <li>• Croup, asthma, tuberculosis, pneumonias,</li> <li>• Pleural effusions.</li> </ul>	C3 C3	SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ

Contents	Objectives	Do-main	Strategy	Assessment
<b>Module-10: Gastroenterology</b>	<ul style="list-style-type: none"> <li>Abdominal pain</li> <li>Malabsorption</li> <li>Hepatitis</li> <li>Cirrhosis</li> <li>Acute liver failure</li> <li>Diarrhea[acute/chronic] dysentery</li> <li>Worm infestations</li> <li>Giardia</li> <li>Amoebiasis</li> <li>Rectal polyp</li> </ul>	C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC SGD/LEC	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
<b>Module-11: Clinical Skills</b>	<ul style="list-style-type: none"> <li>Lumbar puncture</li> <li>Bone marrow aspiration</li> <li>Supra pubic puncture</li> <li>Subdural tap</li> <li>Thoracentesis</li> <li>Pericardiocentesis</li> <li>Liver biopsy</li> <li>Renal biopsy</li> <li>Observe passing of catheter</li> <li>Observe pericardial tap</li> </ul>	C3P2A2 C3P2A2 C3P2A2 C3P2A2 C3P2A2 C3P2A2 C3P2A2 C3P2A2 C3P2A2 C3P2A2	SKILL LAB SKILL LAB SKILL LAB SKILL LAB SKILL LAB SKILL LAB SKILL LAB SKILL LAB SKILL LAB SKILL LAB	OSPE OSPE OSPE OSPE OSPE OSPE OSPE OSPE OSPE OSPE

Domain	Level
Knowledge	<b>C1</b> Knowledge <b>C2</b> Comprehension <b>C3</b> Application <b>C4</b> Analysis <b>C5</b> Synthesis <b>C6</b> Evaluation
Psychomotor	<b>P1</b> Observe <b>P2</b> Practice <b>P3</b> Adjust <b>P4</b> Master <b>P5</b> Develop <b>P6</b> Construct
Affect	<b>A1</b> Receiving <b>A2</b> Responding <b>A3</b> Valuing <b>A4</b> Organization <b>A5</b> Characterization