

CHETTINAD ACADEMY OF RESEARCH AND EDUCATION

(DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF THE UGC ACT, 1956)



FACULTY OF MEDICINE

M.D. PAEDIATRICS

REGULATIONS & SYLLABUS

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CHETTINAD ACADEMY OF RESEARCH AND EDUCATION
REGULATIONS FOR M.D. & M.S. CLINICAL PROGRAMS

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CHETTINAD ACADEMY OF RESEARCH AND EDUCATION

Regulations for M.D./M.S. Clinical Courses

1. INTRODUCTION:

M.D. / M.S. Clinical course is a three year post graduate program under the Faculty of Medicine for students with an Under Graduate Degree in Medicine. This program is taught course that covers relevant topics and a research project in the area of specialization. This program shall be competence based and learning shall be essentially autonomous and self-directed and supplemented with practical and laboratory work. The curriculum shall have modular approach to learning. The research component is through original exploration and experiments culminating in the research project. This program shall impart advanced theoretical and practical aspects of subjects previously studied in a more general manner at the undergraduate level.

These courses are aimed at imparting higher-level training to qualified under graduate medical students in various branches of M.D./M.S. Clinical subjects and to involve the learning experiments to the needs of community.

In exercise of the powers conferred under sub rule (a) and (g) of Rule 8 (b) of Memorandum of Association and Clause 2.1, Chapter III of Bye-laws of Chettinad Academy of Research and Education, the Academic Council hereby makes the following regulations:

2. SHORT TITLE AND COMMENCEMENT:

These Regulations shall be called the "Regulations for M.D /M.S. Clinical Courses of Chettinad Academy of Research and Education. These regulations shall come into force from the academic year 2012-2013. These regulations are subject to modifications as may be approved by the Academic Council from time to time.

3. GOAL:

The goal of postgraduate medical education shall be to produce competent specialists and/or medical teachers:

- i) who shall recognize the health needs of the community and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
- ii) who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
- iii) who shall be aware of the contemporary advance and developments in the discipline concerned.
- iv) who shall have acquired a spirit of scientific inquiry and is oriented to the principals of research methodology and epidemiology and
- v) who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

4. AIMS AND OBJECTIVES:

At the end of the Post Graduate training in the discipline concerned the student shall be able to:

- i) Recognize the importance to the concerned speciality in the context of the health needs of the community and the national priorities in the health section.
- ii) Practice the speciality concerned ethically and in step to the principles of primary health care.
- iii) Demonstrate sufficient understanding of the basic sciences relevant to the concerned speciality.
- iv) Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitating, preventive and primitive measures/ strategies.
- v) Diagnose and manage majority of the conditions in the speciality concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
- vi) Plan and advise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the speciality.
- vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality rate relevant to the assigned situation.
- viii) Demonstrate empathy and human approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.
- ix) Play the assigned role in the implementation of National Health Programme effectively and responsibly.
- x) Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
- xi) Develop skills as a self-directed learner, recognize continuing education needs: select and use appropriate learning resources.
- xii) Demonstrate competence in basic concepts of Research Methodology and epidemiology, and be able to critically analyze relevant published research literature.
- xiii) Develop skills in using educational methods and techniques as applicable to the teaching of Medical/ Nursing students, General Physicians and Paramedical Health Workers.
- xiv) Function as an effective leader of a health team engaged in health care, research or training

5. COMPONENTS OF THE POSTGRADUATE CURRICULUM:

The major components of the Postgraduate curriculum shall be:

- Theoretical knowledge

- Practical and clinical skills
- Writing Thesis/Research articles
- Attitudes including communication skills.
- Training in research methodology, Medical Ethics and Medicolegal aspects.

6. NOMENCLATURE OF POSTGRADUATE COURSES:

The nomenclature of Post Graduate Degree should be as laid down in the Post Graduate Medical Education Regulations prescribed by the Medical Council of India.

7. ELIGIBILITY FOR ADMISSION:

Every student, selected for admission to a post graduate medical course in Chettinad University on acquiring M.B.B.S degree or an equivalent qualification thereto shall have obtained permanent registration with the Medical Council of India, or any of the State Medical Council(s) or shall obtain the same within a period of one month from the date of his/her admission, failing which his/her admission shall stand cancelled.

Provided that in the case of a foreign national, the Medical Council of India may, on payment of the prescribed fee for registration, grant temporary registration, for the duration of the post graduate course limited to the medical college/institution to which the candidate is admitted for the time being exclusively for pursuing post graduate studies.

Provided further the temporary registration to such foreign national shall be subject to the condition that such person is duly registered with appropriate registering authority in his own country wherefrom he has obtained his basic medical qualification and is duly recognized by the corresponding Medical Council or concerned authority.

8. RECOGNITION FEE AND ELIGIBILITY CERTIFICATE:

Candidates who have passed the M.B.B.S Degree Examination other than that conducted by Chettinad Academy of Research and Education shall obtain Eligibility Certificate from this University at the time of admission and also remit recognition fee as prescribed.

9. REGISTRATION:

A candidate admitted to the Post Graduate Course shall register with the University by submitting the prescribed application form for registration, duly filled in along with the prescribed fee, through the Head of the Institution.

10. PERIOD OF TRAINING /DURATION OF THE COURSE:

The duration of certified study and training for the M.D. / M.S. Post Graduate Clinical Courses shall be three completed years including the period of examination.

Provided that in the case of students possessing a recognised two year postgraduate diploma course in the same subject, the period of training, including the period of examination, shall be two years.

11. COMMENCEMENT OF THE COURSE:

The course shall ordinarily commence from 2nd May of the academic year.

12. CUT OFF DATES FOR ADMISSION:

Candidates admitted up to 31st May of the Academic year shall be registered for the same Academic Year but shall be eligible to take up the final examination along with others students admitted prior to their admission. There shall be no admission of students in respect of any academic session beyond 31st May for postgraduate courses under any circumstances. The University shall not register any student admitted beyond the said date.

13. SYLLABUS:

The Syllabus for the course shall be as specified in the annexure to these Regulations.

14. MEDIUM OF INSTRUCTION:

English shall be the medium of instruction for all the subjects of study and for examination.

***15. WORKING DAYS / ATTENDANCE**

All the candidates joining the Post Graduate training program shall work as "Full Time Residents" during the period of training and shall attend not less than 85% (Eighty Five percent) of the imparted training during each academic year including assignments, assessed full time responsibilities and participation in all facets of the educational process as per MCI norms. 85% attendance is compulsory for all the Post Graduate students for every academic year. The Attendance details may be submitted to the Controller of Examinations at the end of every academic year. The student should also be intimated quarterly regarding the lack of attendance.

***16. CONDONATION FOR LACK OF ATTENDANCE:**

The discretionary power of condonation of shortage of attendance to appear for University

Examination rests with the Vice Chancellor.

Lack of attendance can be condoned up to a maximum of 5% of the minimum attendance required

in the following exceptional circumstances:

- (i) Any illness/ accident (for which Medical certificate from a registered medical practitioner must be produced)
- (ii) Any unforeseen tragedy in the family (should produce the letter from the parent/guardian)

- (iii) Participation in NCC/NSS and other co curricular activities representing the Institution / University. (Certificate from competent authority is required)

For any of the above reasons, request shall be made by the candidate with prescribed fees to the Controller of Examination through proper channel, ten days prior to the commencement of the theory examination. Based on the recommendation of the Head of the Institution, the Controller of Examination shall obtain the approval of the Vice Chancellor for admission of the candidate to the University Examination.

***SI.No.15 & 16 Amended vide XVIII meeting of Academic Council dated 15.04.2014 and to be replaced as detailed below:**

In the existing regulations for M.D. Pre – Para and M.D./M.S. Clinical courses, it has been stipulated that 85% attendance is compulsory for all the Post graduate students for every academic year. This has been modified to 80% attendance in keeping with Statutory Body norms. There shall be no condonation for attendance. The attendance criteria will hence read as follow as in MCI regulations.

"All the candidates joining the Post Graduate training programme shall work as 'Full Time Residents' during the period of training and shall attend not less than 80%(Eighty percent) of the imparted training during each academic year including assignments, assessed full time responsibilities and participation in all facets of the educational process."

The Attendance details shall be submitted to the Controller of Examinations at the end of each academic year. The student should also be intimated quarterly regarding the lack of attendance.

16 (a) STIPEND AND GRANT OF LEAVE

The Post Graduate students undergoing Post Graduate Degree / Diploma/Super-Specialty course shall be paid stipend on par with the stipend being paid to the Post Graduate students of State Government Medical Institutions / Central Government Medical Institutions, in the State / Union Territory where the institution is located. Similarly, the matter of grant of leave to Post Graduate students shall be regulated as per the respective State Government rules.

17. MIGRATION / TRANSFER OF CANDIDATES:

Under no circumstances, Migration/transfer of student undergoing any Post Graduate degree course shall be permitted by the University/Authority

18.TRAINING PROGRAM:

The training given with due care to the Post Graduate students in the recognised institutions for the award of various Post Graduate medical degrees / super speciality degrees shall determine the expertise of the specialist and / or medical teachers produced as a result of the educational program during the period of stay in the institution.

The Post Graduate students of the institutions which are located in various States / Union Territories shall be paid remuneration at par with the remuneration being paid to the Post Graduate students of State Government medical institutions / Central Government Medical Institutions, in the State/Union Territory in which the institution is located. Similar procedure shall be followed in the matter of grant of leave to Post Graduate students.

- (a) Every institution undertaking Post Graduate training programme shall set up an Academic cell or a curriculum committee, under the chairmanship of a senior faculty member, which shall work out the details of the training programme in each speciality in consultation with other department faculty staff and also coordinate and monitor the implementation of these training Programmes.
- (b) The training programmes shall be updated as and when required. The structured training programme shall be written up and strictly followed, to enable the examiners to determine the training undergone by the candidates and the Medical Council of India inspectors to assess the same at the time of inspection.

During the training for PG Degree Courses to be awarded in clinical disciplines, there shall be proper training in basic medical sciences related to the disciplines concerned; during the training for the degree to be awarded in basic medical sciences, there shall be training in applied aspects of the subject; and there shall be training in allied subjects related to the disciplines concerned. In all Post Graduate training programmes, both clinical and basic medical sciences, emphasis is to be laid on preventive and social aspects and emergency care facilities for autopsies, biopsies, cytopsies, endoscopic and imaging etc. also be made available for training purposes. The Post Graduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.

Training in Medical Audit, Management, Health Economics, Health Information System, basics of statistics, exposure to human behaviour studies, knowledge of pharmaco – economics and introduction to non- linear mathematics shall be imparted to the Post Graduate students.

Implementation of the training programmes for the award of various Post Graduate Degree course shall include the following:-

Basic Medical Sciences

- (i) Lectures, Seminars, Journal Clubs, Group Discussions, Participation in laboratory and experimental work, and involvement in research studies

in the concerned speciality and exposure to the applied aspects of the subject relevant to clinical specialities.

Clinical disciplines

- (i) In service training, with the students being given graded responsibility in the management and treatment of patients entrusted to their care; participation in Seminars, Journal clubs, Group Discussions, Clinical Meetings, Grand rounds, and Clinico - Pathological Conferences; practical training in Diagnosis and medical and Surgical treatment; training in the Basic Medical Sciences, as well as in allied clinical specialities.

The training program shall be on the same pattern as for M.D. / M.S. in clinical disciplines; practical training including advanced Diagnostic, Therapeutic and Laboratory techniques, relevant to the subject of specialization.

The Academic Council in its XV meeting held on 08.05.2013 resolved to approve the following Curriculum Committee's recommendations.

- ❖ The members of Post Graduate Curriculum committee recommended that M.D/M.S. specialty Post Graduates can be posted to other department, so that it may give the Post Graduate an integrated approach.

MD PG Speciality	Departments to which they may be posted
Anaesthesia	Medicine, Obsterics and Gynaec
Dermatology	Medicine, Pulmonology
Pulmonology	Medicine, Cardiology, Cardio thoracic surgery
Obsterics and Gynaec	Medicine, Neonatology, Oncology
Orthopaedics	General Surgery
ENT	General Surgery
Ophthalmology	General Surgery, Medicine

19.MAINTENANCE OF LOG BOOK

- a) Every Post Graduate student shall maintain a record (Log) book containing skills, the candidate has acquired during the training period certified by the various heads of department where the candidate has undergone training including outside the institution.
- b) The students shall maintain a Record Book (Log Book) of the work carried out by them & training program undergone during the period of training including details of procedures carried out independently or assisted by the candidate. The log book will be checked by the faculty members imparting the training.

- c) At the end of the course, the candidate should summarise the contents and get the record (Log) book certified by the Head of the Department.
- d) The record (Log) book should be submitted at the time of practical examination for the scrutiny of the Board of Examiners.
- e) It would be the constant endeavour of the faculty to develop desirable attitudes in the PG trainees during the course by personal examples, interaction and group discussion. Constant watch will be maintained during their work in the wards to ensure that this objective is being met. Although there will be no formal evaluation of attitude, some aspects of this domain would be covered during the formative evaluation as noted below for continued internal assessment. Formative evaluation will be carried out over following activities of the P.G. resident.

- i)Ward work
- ii)Case presentation
- iii)P.G.Lecture
- iv)Journal club
- v)General assessment of affective function attitude by medical & paramedical staff;
- vi)Internal Assessment

Candidates can appear for theory examination only after being certified on the basis of Internal assessment.

20.THESIS / DISSERTATION AND EVALUATION

- a) All Candidates admitted to undergo Post Graduate Degree course shall be assigned a topic for dissertation / thesis by the Head of the concerned unit and the title of the topic assigned to the candidates be intimated to the Controller of Examination of the University by the Head of the Department through the Head of the Institution before end of the First year.
- b) The dissertation / thesis shall be a bound volume of minimum 50 pages and not exceeding 75 pages of typed matter (double line spacing and on one side only) excluding certification, acknowledgements, annexure and bibliography.
- c) Four copies of dissertation shall be submitted six months prior to the commencement of the examination on the prescribed date to the controller of examination of the University.
- d) Two copies are to be submitted as an electronic version of the entire dissertation in a standard C.D. format mentioning the details and technicalities used in the C.D. format.

- e) The concerned Professors / Readers are to supervise and to see that the dissertation are done properly utilising the clinical materials of their own department / institution. The students must learn the design and interpretation of research studies, responsible use of informed consent and research methodology and interpretation of data and statistical analysis. They should seek the help of qualified staff members in the conduct of research. They must learn to use library and the computer-based research. This training will help them to develop skills in planning, designing and conduct of research studies.
- f) All candidates on admission will be allotted one of the department faculties who have fulfilled the requirement to be guides for purposes of guiding Dissertation/thesis. The topic for dissertation shall be finalized and discussed in the departmental faculty meeting and allotted to the individual candidates before the completion of 3 months after admission. The purpose of dissertation is to develop in the candidate the ability to perform an independent study keeping the principles and research methodology in mind. The candidate will therefore work on the prospective problem either within the department or in collaboration with other departments. There will be continuous monitoring of the dissertation work by the guides and co-guide and by the other department staff throughout the course. The candidate will present the progress of the dissertation to the faculty on the completion of 1 ½ years for monitoring and feedback. The completed dissertation should be submitted not later than 6 months before final examination.
- g) The theory examinations shall be held sufficiently earlier than the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the start of the Clinical/Practical and Oral examination.
- h) The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical. A candidate shall be allowed to appear for Theory and Practical/Clinical examination only after the acceptance of thesis by the examiners. The thesis shall be evaluated under the following heading:
 - 1) Approved
 - 2) Not approved

In all cases the approval shall be given before 3 months of the date of appearing for the examination and this will be essential before the candidate is allowed to appear for the written examination.

21.SCHEDULE OF EXAMINATIONS:

The examination for M.D./ MS, shall be held at the end of 3rd academic year. An academic term shall mean six month's training period."

22. *SCHEME OF EXAMINATIONS:

Post Graduate Examinations shall consist of Dissertation/Thesis, Written Paper (Theory), Practical/Clinical and Viva voce.

The examinations shall be organised on the basis of "Marking system" to evaluate and to certify candidate's level of knowledge, skill and competence at the end of the training.

- a. Dissertation/Thesis:** Every candidate shall carry out and submit a Dissertation/Thesis as explained and approval of Dissertation/Thesis shall be a precondition for a candidate to appear for the final year examination.
- b.** A postgraduate student of a postgraduate degree course would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.
- c. Theory:** A Written Examination shall consist of four theory papers each of three hours duration. Each paper carries 100 marks (Total 400 marks). Out of these one shall be of Basic Medical Sciences and one shall be of Recent advances. The theory examinations shall be held well in advance than the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the commencement of the Clinical/Practical and Oral examination.
- d. Clinical Examination:** Clinical examination for the subjects in Clinical sciences shall be conducted to test the knowledge and competence of the candidates for undertaking independent work as a specialist/Teacher, for which candidates shall examine a minimum one long case and two short cases.
- e. Oral Examination:** The Oral examination shall be thorough and shall aim at assessing the candidate knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the specialty, which form a part of the examination.

THEORY	
No. of Theory Papers	4
Marks for each Theory Paper	*100
Total marks for Theory Paper	400
Passing Minimum for Theory	200/400
Total Marks for CLINICAL	300
Passing Minimum for Clinical	150/300
Viva voce	100
Passing minimum for Clinical including Viva voce	200/400

(i) if any candidate fails even under one head, he/she has to re-appear for entire examination.

(ii) Theory paper consist of 2 essay questions of 25 marks each (2 X 25 = 50) & 5 short notes of 10 marks each (5 X 10 = 50). Total =100 marks each.

Sl.No.22 (ii) Amended vide XVIII meeting of Academic Council dated 15.04.2014 and to be replaced as detailed below:

Resolved to approve 2 Essay Questions (2 x 20 marks) and 10 short notes (10 x 6 marks) for all post graduate medical / broad and higher speciality courses which will take effect for the students appearing for first time examination from March 2015.

Sl.No.22(ii) Amended in XX Academic Council dated 25.03.2015.

Resolved to approve 2 essays (2 x 20 marks) and 6 short notes (6 x 10 marks) for theory paper in all M. D/ M.S. courses by the Academic Council in its XX meeting held on 25.03.2015.

***Resolved to approve that an examinee should obtain minimum 40% marks in each theory paper and not less than 50% marks cumulatively in all the four papers in P.G. degree examination to be cleared as passed which will be implemented prospectively. (Academic Council in its XX meeting held on 25.03.2015).**

23. EXAMINERS:

All the Post Graduate Examiners shall be recognized Post Graduate Teachers holding recognized post graduate qualification in the subject concerned. For all Post Graduate Examinations, the Minimum number of examiners shall be Four, out of which at least two (50%) shall be external examiners who shall be invited from other recognized universities from outside the state / outside university. The remaining two will be internal examiners.

The qualification and teaching experience for appointment of examiner shall be as detailed below and by the guidelines of Medical Council of India issued from time to time.

No person shall be appointed as an internal examiner in any subject unless he/she has three years' experience as recognized PG teacher in the concerned subject. For external examiners, he/she should have minimum six years of experience as recognized PG teacher in the concerned subject'. "An examiner shall ordinarily be appointed for not more than two consecutive terms"

- i. Under exceptional circumstances, examinations may be held with 3 (three) examiners provided two of them are external and Medical Council of India is intimated for the justification of such action prior to publication of result for approval. Under no circumstances, result shall be published in such cases without the approval of Medical Council of India.

24. MAXIMUM NUMBER OF CANDIDATES:

The maximum number of candidates to be examined in clinical/practical and oral on any day shall not exceed eight for M.D./M.S. Clinical Courses.

25. *NUMBER OF EXAMINATIONS:

The University shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the two examinations. The examination shall be conducted in March and September.

***Sl. No.25 Amended in XXI meeting of Academic Council dated 22.07.2015.**

Resolved to approve the commencement of M.D. /M.S. University examination in April (for Regular Batch) and October (for Supplementary Batch).

26. REVALUATION OF ANSWER PAPERS:

There shall be no revaluation of answer papers. However, re-totaling is allowed in the failed subjects with the payment of required fee fixed by the University within 15 days from the date of receipt of statement of marks.

SYLLABUS M.D. PEDIATRICS

1. GOAL

The goal of MD course in Pediatrics is to produce a competent pediatrician who:

- (i) recognizes the health needs of infants, children and adolescents and carries out professional obligations in keeping with principles of National Health Policy and professional ethics;
- (ii) has acquired the competencies pertaining to pediatrics that are required to be practiced in the community and at all levels of health care system;
- (iii) has acquired skills in effectively communicating with the child, family and the community;
- (iv) is aware of the contemporary advances and developments in medical sciences as related to child health;
- (v) is oriented to principles of research methodology; and
- (vi) has acquired skills in educating medical and paramedical professionals.

2. Objectives

At the end of the MD course in Pediatrics, the student should be able to

- (i) recognize the key importance of child health in the context of the health priority of the country;
- (ii) practice the speciality of Pediatrics in keeping with the principles of professional ethics;
- (iii) identify social, economic, environ-mental, biological and emotional determinants of child and adolescent health, and institute diagnostic, therapeutic,

rehabilitative, preventive and promotive measures to provide holistic care to children;

(iv) recognize the importance of growth and development as the foundation of Pediatrics; and help each child realize her/his optimal potential in this regard;

(v) take detailed history, perform full physical examination including neuro-development and behavioral assessment and anthropometric measurements of the child and make clinical diagnosis;

(vi) perform relevant investigative and therapeutic procedures for the pediatric patient;

(vii) interpret important imaging and laboratory results;

(viii) diagnose illness in children based on the analysis of history, physical examination and investigative work up;

(ix) plan and deliver comprehensive treatment for illness in children using principles of rational drug therapy;

(x) plan and advise measures for the prevention of childhood disease and disability.

(xi) plan rehabilitation of children suffering from chronic illness and handicap, and those with special needs;

(xii) manage childhood emergencies efficiently;

(xiii) provide comprehensive care to normal, 'at risk' and sick neonates;

(xiv) demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;

(xv) recognize the emotional and behavioral characteristics of children, and keep these fundamental attributes in focus while dealing with them;

(xvi) demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;

(xvii) demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities;

(xviii) develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based pediatrics;

(xix) demonstrate competence in basic concepts of research methodology and epidemiology;

(xx) facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher-trainer;

(xxi) play the assigned role in the implementation of national health programs, effectively and responsibly;

(xxii) organize and supervise the desired managerial and leadership skills;

(xxiii) function as a productive member of a team engaged in health care, research and education.

Skills

- I. Elicit appropriate clinical history
- II. Demonstrate appropriate clinical and physical examination skills on children.
- III. Plan & decide upon and interpret appropriate cost-effective investigation.
- IV. Perform, resuscitate and stabilize children in Pediatric or Neonatal emergencies.
- V. Learn procedures directed both towards therapeutic and diagnostic purposes e.g., bone marrow, lumbar puncture etc.
- VI. Learn proper examination including use of otoscope and ophthalmoscope
- VII. Genetic counseling.
- VIII. Communication with children and parents / counseling.

3.1 SYLLABUS

Growth and development:

- principles of growth and development
- normal growth and development
- normal growth and development in childhood and adolescence
- sexual maturation and its disturbances
- failure to thrive and short stature
- normal newborn
-

Patho-physiology of body fluids and fluid therapy (approach and management)

- Physiology of fluids, electrolytes and acid bases,
- Dehydration and fluid management,
- Dys- electrolytemia,
- Acid Base Disorders,
- Special Situations-Pyloric stenosis, Central Nervous System disorders, burns, perioperative, Hirschsprung disease, endocrine disorders, renal failure & fluid management in the neonate

Acutely ill child

- Evaluation in emergency
- Emergency medical services
- Pediatric critical care
- respiratory failure and shock
- acute neurological dysfunction
- resuscitation-basic and advanced
- Neonate Ambulatory Life Support /Pediatric Ambulatory Life Support
- post resuscitation stabilization
- Cold/Heat injury,
- Transportation of sick children/neonates,
- Post-operative supportive care

EMERGENCIES/ CRITICAL CARE PEDIATRICS

- Fluid abnormalities,
- Electrolyte abnormalities,
- Thermoregulation problems,
- Hypertensive crisis
- Congestive cardiac failure,
- Cardiogenic shock
- Pericardial tamponade
- Cyanotic spells,
- Unstable and stable Arrhythmias,
- Vomiting and diarrhea, GI bleeds- Hematemesis, melena, hematochezia, Adrenal crisis,
- Metabolic problems-hyper ammonemia, lactic acidosis, acid base abnormalities, hypoglycemia,
- Septicemic shock, viral infections and shock Systemic, Inflammatory Response Syndrome, Multiorgan Dysfunction Syndrome,
- Pneumothorax, empyema, pleural effusion, ascites,
- Severe anaemia, bleeding child, neutropenia.,
- Pain management, drug therapy,
- Acute Respiratory Distress Syndrome,
- Respiratory failure, Burns/electrocution,
- Animal bites,
- Pre-anaesthetic checkup (PAC), Pediatric anesthesia,
- Sickle cell crisis,
- severe complicated malaria,
- Oncological emergencies
- Acute severe asthma, bronchiolitis,
- Status epileptics,
- Febrile seizure,
- Coma,
- Increased intra-cranial pressure,
- Cardiopulmonary resuscitation,
- Shock,
- Upper airway obstruction,
- Near drowning,
- Poisoning,
- Snake bite,
- Scorpion sting,
- Physical abuse, Sexual abuse,
- Organization of a PICU/NICU,
- Equipment for intensive care,
- Levels of care in NICU/PICU

Human Genetics

- Molecular basis of disorders
- Molecular diagnosis
- Inheritance patterns
- Chromosomal / genetic clinical abnormalities (Trisomies etc)
- Genetic counseling
- Dysmorphism
- Gene therapy
- Pedigree charting
- Screening for genetic disorders

Metabolic disorders

- Approach to Inborn Errors of Metabolism defects,
- Amino acid metabolic defects-
- Carbohydrate metabolism Mucopolysaccharidosis, Hypoglycemia, Porphyrin,
- Lipid metabolism
- Purine and pyrimidine disorders
- Mucopolysaccharidosis
- Human Genome Project

Fetus and newborn

- Mortality and morbidity,
- Newborn-history, examination, routine, delivery care, nursery care, bonding
- High risk pregnancies
- Dysmorphism
- Fetus well being (including NST, partogram, cardiotocogram),
- Growth/development
- Fetal distress
- Maternal medications
- Detection, treatment, prevention of fetal disease, Antenatal diagnosis, Fetal therapy, Antenatal therapy
- Counseling
- Teratogenesis/radiation
- High risk infant, Multiple pregnancies, Prematurity, Postdated, Intrauterine Growth Retardation/Low Birth Rate, Large for gestational age, Congenital anomalies/malformations (Neural tube defects, Intestinal atresia, malrotation etc)
- Birth injuries, Hypoxia-ischemia, asphyxia, Neonatal Encephalopathy
- Organisation and levels of newborn care
- Normal newborn, Common problems in normal newborn, Delivery room emergencies NALS
- Respiratory disorders (Hyaline Membrane Disease, Meconium Aspiration Syndrome, MAS), Chronic Lung Disease, CLD, Apnea, Air Leak syndrome), Oxygen therapy, toxicity, Ventilation
- GI disturbances including Necrotising Enterocolitis, Gastroesophageal reflux, Feeding Intolerance, Hyperbilirubinemia
- Cardiac problems
- Persistent Pulmonary Hypertension,
- Blood disorders Polycythemia, Anaemia, Hemorrhagic disease of newborn, Thrombocytopenia
- Genitourinary disturbances
- Metabolic disorders
- Endocrine disorders- Idiopathic Diabetes Mellitus, Congenital Adrenal Hyperplasia, Congenital Adrenal Hyperplasia, Ambiguous genitalia,
- Fluid and electrolytes in newborn care,

- Nutrition and feeding the newborn term/preterm,
- Low Birth Weight
- Intrauterine Growth Retardation
- Large for gestational age
- Total Parenteral Nutrition
- Neonatal transport
- Neonatal Seizures
- Intracranial hemorrhage
- Surgical problems - Tracheo-esophageal fistula, Anorectal malformations, Diaphragmatic hernia/eventration, Hirschsprung, Urogenital anomalies, Necrotising-enterocolitis, Congenital labor emphysema, volvulus,
- Thermoregulation
- Arthritis & Osteomyelitis
- Neonatal follow up Retinopathy of prematurity (ROP), hearing, early intervention
- Neurodevelopmental follow up, Neonatal Screening
- Neonatal Equipment
- Hemodynamic monitoring
- Surfactant therapy

Neonatal infections

- Epidemiology
- Intrauterine infections
- Viral infections
- Neonatal sepsis/meningitis
- Pneumonia
- UTI (Urinary Tract infections)
- Hepatitis
- Perinatal HIV
- Nosocomial infections
- Universal precautions
- Prevention of infections
- Therapy-antimicrobials, adjuvant

Adolescent health

- Epidemiology
- Sexual development and Sexual Maturity Ratings stages
- Deliveries of health care
- Pregnancy
- Contraception
- Sexually Transmitted Disorders/HIV
- Menstrual problem
- Anorexia nervosa, bulimia
- Life Skills Management
- Accidents and risk taking behavior

Immunological system

- Basics of immunology
- Approach to immunodeficiency
- Human Immunodeficiency virus
- Bone marrow transplantation
- Primary B cell disease
- Primary T cell disease
- Complement and phagocytic disease

- Chronic granulomatous disease
- Chediak Higashi disease
- Neutrophil abnormalities
- Adhesion disorders
-

Allergic disorders

- Allergy and Immunological basis
- Diagnosis
- Therapy-principles, Allergic rhinitis, Asthma, Atopic dermatitis, Urticaria, angioedema, Anaphylaxis, Serum sickness, Adverse drug reactions, Adverse food reaction, Insect allergy, Ocular allergy

Rheumatology

- Autoimmunity
- Laboratory evaluation
- Neonatal lupus
- Juvenile Rheumatoid Arthritis
- HLA Typing
- Ankylosing spondylosis
- Scleroderma
- Mixed connective tissue disease
- Dermatomyositis
- Behcet
- Sjogren
- Newer Drug therapy & disease modifiers

Mental disorders

- Depression
- Suicide
- Substance abuse
- Sleep disorders

Skin / orthopedics

- SLE
- Vasculitis
- Erythema Nodosum
- Kawasaki disease
- Non- rheumatic conditions

Respiratory system

- Development and function
- Disorders of upper respiratory tract
- Disorders of lower respiratory tract
- Pleural disorders
- Chronic respiratory disease
- Interstitial fibrosis
- ILD
- empyema
- lung abscess
- Bronchiectasis
- Recurrent respiratory disease
- Ventilation, Pulmonary function tests
- Cystic fibrosis
- Obstructive sleep apnea
- Pulmonary hemosiderosis
- Neuromuscular skeletal disorders
- Bronchial asthma

- Foreign Body
- Congenital disorders of nose
- Hypoventilation
- Hypostatic pneumonia
- Kyphoscoliosis
- Central hyperventilation
- Cough syncope

Cardiovascular system

- Investigations-lab, ECG, CXR, ECHO,
- Physiology and pathophysiology of transitional circulation embryology
- Congenital heart disease epidemiology, approach, cyanotic and acyanotic
- Cardiac arrhythmia
- Acquired heart disease infective, Endocarditis rheumatic heart disease
- Disease of the myocardium-Myocarditis
- Cardiac therapeutics, Hyperlipidemia & Hypertension
- Sick sinus syndrome
- Tumors of heart, Heart lung, Heart transplants, Aneurysms and fistulae

Infectious diseases

- Fever
- Clinical use of micro lab
- Fever without a focus
- Sepsis and shock
- CNS infections
- Pneumonia
- Gastroenteritis
- Osteomyelitis
- septic arthritis
- Compromised host infections
- Bacterial infections
- Anaerobic infections
- Viral infections
- Mycotic infections
- Candidiasis
- Aspergillosis
- Parasitic infections, Helminthiasis
- Protozoal infections, Malaria, Kala azar, Leishmania, Giardia, Amoebiasis,
- Antiparasitic drugs
- Antimicrobials
- Antiviral drugs, interferon
- Antifungals
- Preventive measures
- Health advice for traveling
- Infection control
- Immunization-principles, schedules, controversies standard and optional vaccines recent advances in vaccines

Digestive system

- Normal tract-physiology, anatomy, development
- Disorders of esophagus
- Disorders of stomach
- Disorders of intestines except food allergy
- Disorders of pancreas
- Disorders of liver and biliary system acute hepatitis, chronic hepatitis,

cirrhosis, metabolic liver diseases, cholestatic liver diseases, neonatal obstructive cholangiopathy,

- complication of liver disease-portal hypertension, encephalopathy, coagulopathy,
- Disorders of peritoneum
- GI functions tests
- Liver Function Tests
- Gastroesophageal Reflux
- Celiac Disease
- Antiviral therapy for Hep B & C
- Approach to malabsorption

Blood

- Development of hematopoietic system,
- Anemia, Inadequate production, nutrition-iron, folate, B12, Bone marrow failure, Hemolytic, congenital and acquired, Constitutional pancytopenia, Thalassemias, Sickle cell anemia, Granulocyte transfusions, Pancytopenia,
- Blood and component transfusions,
- Thrombotic disorders,
- Hemorrhagic disorders-acquired and congenital, physiology, bleeding disorders, coagulation disorders,
- Hypersplenism, trauma, splenectomy, Physiology and disorders of the spleen,
- Lymphoreticular malignancies

Neoplasms

- Principles of diagnosis & Epidemiology
- Principles of treatment & Molecular pathogenesis
- Leukemia & Lymphomas
- Neuroblastomas & Kidney tumors
- Bone neoplasms & Soft tissue sarcomas
- Brain Tumors & Retinoblastoma
- Gonadal, germ cell tumors
- Liver neoplasm
- GI neoplasm
- Carcinomas Skin cancer Benign tumors

Nephrology

- Structure and function of kidney
- Hematuria & Proteinuria Evaluation
- HUS (Hemolytic Uraemic Syndrome)
- Evaluation Renal Function Test,
- Proteinuria, Nephrotic syndrome, Acute glomerulonephritis
- Tubular disorders ATN (Acute Tubular Necrosis)
- Function RTA (Renal tubular acidosis), DI (Diabetes Insipidus),
- Renal failure (Ac & Ch) & ESRD (End stage renal disease)
- RPGN (Rapidly progressive glomerulonephritis)
- Renal replacement therapy
- Bartter syndrome
- Investigations
- Toxic nephropathy
- Membranous Glomerulo-nephritis
- Lupus nephritis
- Membranoproliferative Glomerulonephritis)
- Interstitial nephritis, Cortical necrosis

Urological disorders

- UTI (Urinary Tract Infection)
- Congenital anomalies
- Dysgenesis kidney
- Vesicoureteral reflux
- Bladder anomalies
- Obstructions
- Anomalies of Urogenital System
- Obstructions
- Scrotal anomalies
- Genitourinary trauma
- Urinary lithiasis
- Investigations-imaging, renal function tests, Neurogenic bladder

Gynecological problems

- Menstrual problems
- Vulvovaginitis
- Developmental anomalies
- A child with special gynae needs
- Neoplasms
- Breast disorders
- Hirsutism
- polycystic ovaries
- Gyne imaging
- Athletic problems

Endocrine

- Hypothalamus and pituitary
- Hyperpituitarism
- Hypopituitarism
- DI (Diabetes Insipidus)
- ADH (Antidiuretic hormone)
- Physiology of puberty
- Disorders of puberty
- Precocious puberty
- Delayed puberty
- Thyroid
- Thyroid studies
- Hypothyroidism
- Thyroiditis
- Goiter
- Hyperthyroidism
- Parathyroid and disorders
- Diabetes mellitus
- Adrenal disorders, CAH (Congenital adrenal hyperplasia), Cushing, Addison, Excess mineralocorticoids, Feminizing adrenal tumors
- Pheochromocytoma
- Ambiguous genitalia
- Menstrual Disorders
- Obesity
- Short Stature

CNS

- Examination
- localization of lesions
- Congenital anomalies
- Seizures
- Headaches
- Neurocutaneous disorders
- Coma
- Brain death
- Head injury
- Neurodegenerative disorders grey/white
- Acute stroke
- Brain abscess
- Tumors
- Spinal cord disorders
- Investigation
- Antiepileptic drugs
- SSPE (Subacute Sclerosing panencephalitis)
- Rabies vaccine encephalomyelitis
- Acute demyelinating encephalomyelitis
- Approach, investigations of Upper Motor Neuron, Lower Motor Neuron, extra pyramidal, cerebellar lesions, Cerebral palsy, Neuroinfections, Encephalopathies, Movement disorders

Neuromuscular

- Evaluation, investigations
- Muscular dystrophies, congenital
- Neuromuscular transmission,
- Bell's palsy
- Floppy infant/Ac Flaccid paralysis
- Myasthenia gravis
- Motor sensory neuropathy
- Autonomic neuropathy

Eye

- Examination of eye
- Diseases of eye movement and alignment disorders
- Disease of conjunctiva-conjunctivitis
- Diseases of lens- cataracts
- Diseases of optic nerve-papillitis
- Diseases of cornea- clouding, Vitamin A deficiency, Lacrimal problems-dacryocystitis
- Retinopathy of prematurity
- Visual Evoked Response
- Orbital Cellulitis
- Cavernus sinus thrombosis
- Retinoblastoma
- Injuries to eye

Ear

- Clinical manifestations
- Hearing loss

- External otitis
- Otitis Media
- BERA
- Rhabdomyosarcoma
- Ear Drum & Sinus Diseases

SKIN

- Morphology
- Evaluation
- Principles of therapy
- Neonatal Skin
- Ectodermal dysplasias
- Vascular disorders
- Cutaneous nevi
- Pigment disorders
- Hyper pigmentation
- Hypo pigmentation
- Vesiculo-bullous disease
- Eczema
- Cutaneous infections-bacterial, viral, fungal
- Arthropod bites, infections
- Acne, Nutritional diseases, Drug reactions

Bone/Joint

- Evaluation
- Diseases of foot, toes
- Torsional, angular deformities disorders
- Arthrogyrosis
- Common fractures
- Arthritis-approach, investigations, management,
- Congenital dislocation of hip
- Osteomyelitis
- Septic arthritis
- Idiopathic hypercalcemia
- Disease of the hip
- Disease of the spine
- Disease of the neck

Metabolic Bone Disease

- Bone and Vitamin D
- Familial Hypophosphatemia
- Rickets-nutritional and non-nutritional

Unclassified disease

- SIDS (sudden infant death syndrome)
- Langerhan Cell Histiocytosis
- Cystic fibrosis
- Lead poisoning
- Envenomation
- Mammalian bites
- Common poisoning- Organo phosphorus, kerosene, Phenobarbitone, iron, etc.Radiation
- Chemical pollutants, Mercury
- Nonbacterial poisoning

SOCIAL PEDIATRICS

- Epidemiology and Medical statistics
- Immunization
- National Programs
- Acute Flaccid Paralysis (AFP) Surveillance
- Reproductive & Child Health
- Integrated Management of Childhood illness
- Impact of Air, Water and environmental pollution, pesticides
- Impact on Growing fetus
- Medical Waste Disposal
- Medico Legal Aspects

General Guidelines – during the training period effort must always be made that adequate time is spent in discussing child health problems of public health importance in the country or a particular region.

3.2 Approach to Important Clinical Problems

3.2.1 Growth and development

- precocious and delayed puberty
- developmental delay
- impaired learning

3.2.2 Neonatology:

- normal newborn
- low birth weight newborn
- sick newborn

3.2.3 Nutrition:

- lactation management and complementary feeding (underweight, wasting, stunting)
- protein energy malnutrition
- failure to thrive and micronutrient deficiencies

3.2.4 Cardiovascular:

- murmur
- cyanosis
- congestive heart failure
- systemic hypertension
- arrhythmia
- shock

3.2.5 GIT and liver:

- Acute diarrhea
- persistent and chronic diarrhea
- abdominal pain and distension
- ascites
- vomiting
- constipation
- gastrointestinal bleeding
- jaundice
- hepatosplenomegaly
- hepatic failure and encephalopathy

3.2.6 **Respiratory:**

- Cough/chronic cough
- noisy breathing
- wheezy child
- respiratory distress
- hemoptysis

3.2.7 **Infections:**

- acute onset pyrexia without localizing signs
- prolonged pyrexia with and recurrent infections
- nosocomial infections

3.2.8 **Renal:**

- Hematuria/dysuria
- bladder/bowel incontinence
- voiding dysfunctions
- renal failure (acute and chronic)

3.2.9 **Hema oncology:**

- lymphadenopathy
- anemia
- bleeding

3.2.10 **Neurology:**

- limping child
- convulsions
- abnormality of gait
- paraplegia, quadriplegia
- macrocephaly & microcephaly
- floppy infant
- acute flaccid paralyse
- Cerebral palsy and other neuromotor disability
- headache

3.2.11 **Endocrine:**

- thyroid swelling
- ambiguous genitalia
- obesity
- short stature
- precocious & delayed puberty

3.2.12 **Skin/Eye/ENT:**

- skin rash
- pigmentary lesions
- pain/discharge from ear
- hearing loss
- epistaxis
- refractory errors
- blindness

- cataract
- eye discharge
- redness
- squint
- proptosis

3.2.13 **Miscellaneous:**

- habit disorders
- hyperactivity and attention deficit
- arthralgia syndrome
- arthritis
- multiple congenital anomalies

3.3 **Bedside procedures:**

Therapeutic skills:

- hydrotherapy
- nasogastric feeding
- endotracheal intubation
- cardiopulmonary resuscitation
- administration of oxygen (pediatric and neonatal)
- venepuncture and establishment of vascular access
- administration of fluids, blood & blood components
- parenteral nutrition
- intraosseous fluid administration
- intrathecal administration of drugs
- common dressings
- abscess drainage

Investigative skills:

- blood sampling – venous and arterial
- lumbar puncture
- ventricular tap
- bone marrow aspiration and biopsy
- peritoneal, pericardial and subdural tap
- kidney biopsy
- liver biopsy
- muscle and nerve biopsy
- collection of urine for culture,
- urethral catheterization
- suprapubic aspiration

Bedside investigations:

- hemoglobin, TLC, ESR,
- peripheral smear staining and examination
- urine: routine and microscopic examination
- stool microscopy including hanging drop preparation
- examination of CSF and other body fluids
- Gram stain

- ZN stain
- shake test on gastric aspirate

3.3.3 Interpretation:

- interpretation of X-rays of chest, abdomen, bone and skull
- ECG;
- ABG findings;
- ultrasound and common EEG patterns
- CT scan
- audiograms _
- ultrasonographic abnormalities and isotope studies

3.4 Understanding of Basic Sciences:

- embryogenesis of different organ systems especially heart, genitourinary system, gastrointestinal tract
- applied anatomy of different organs
- functions of kidney, liver, lungs, heart and endocrine glands
- Physiology of micturition and defecation
- placental physiology, fetal and neonatal circulation
- regulation of temperature (especially newborn) _ blood pressure
- acid base balance
- fluid electrolyte balance
- calcium metabolism
- vitamins and their functions
- hematopoiesis, hemostasis
- bilirubin metabolism
- growth and development at different ages
- puberty and its regulation
- normal requirements of various nutrients
- teaching methodology and clinical epidemiology
- principles of basic immunology, bio-statistics managerial skills
- microbial agents and their epidemiology
- pharmacokinetics of commonly used drugs
- basics of genetics and molecular biology

3.5 Community and Social Pediatrics

- national health nutrition programs
- nutrition screening of community
- prevention of blindness
- school health programs
- prevention of sexually transmitted diseases
- contraception
- health legislation
- national policy on children
- adoption
- child labor
- juvenile delinquency

- government and non-government support services for children
- investigation of adverse events following immunization in the community
- general principles of prevention and control of infections including food borne waterborne soil borne and vector born diseases
- investigation of an outbreak in a community

4 TEACHING PROGRAM

4.1. General Principles

·Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training should be skills oriented.

· Learning in postgraduate program should be essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

4.2. Formal Teaching Sessions

In addition to bedside teaching rounds, at least 5 hours of formal teaching per week are a must. The departments may select a mix of the following sessions:

<i>Journal club/</i>	
<i>Medical and perinatal audit</i>	Once a week
<i>Seminar/lecture</i>	Once a week
<i>Case discussion</i>	Twice a week
<i>Interdepartmental</i>	
<i>case/seminar</i>	Once a week
<i>[Cardiology, Pediatric surgery etc.]</i>	

Additional sessions on basic sciences, biostatistics, research methodology, teaching methodology, health economics, medical ethics and legal issues related to pediatric practice are suggested. Note: These additional sessions may be organized as an institutional activity for all postgraduates.

Rotations I year

1. General Paediatrics	6 Months
2. Primary Paediatric care at P.H.C. Affiliated to the college	1 Month
3. Paediatric in Community Hospital	1 Month
4. General Medical Unit (Adult Medicine)	2 Months
5. Newborn	1 Month
6. PICU / ER	1 Month

II year

1. General Paediatrics	3 Months
2. Paediatric Critical Care Unit / ER	2 Months

3. Child Nutrition Clinic	1 Month
4. Paediatric Gastro Enterology	1 Month
5. Paediatric Pulmonology	1 Month
6. Urban Community Paediatric Services in Peripheral Paediatric Clinics	1 Month
7. School Health Services	15 Days
8. Child Psychiatric Clinic	15 Days
9. Newborn ward	2 Months

III year

1. Perinatal / Neonatal	2 Months
2. Parent Craft, Paediatric Health Education, visits to centres for Handicapped children (Social Paediatrics)	1 Month
3. General Paediatrics Unit	3 Months
4. Paediatric Nephrology	1 Month
5. Paediatric Hematology	1 Month
6. Paediatrics Cardiology	1 Month
7. Paediatrics Neurology	1 Month
8. Paediatric Surgery	15 days
9. Dermatology	15 days
10. Child Development Assessment Clinic	15 Days
11. Clinic Genetics	15 Days

5. THESIS

5.1 Objectives

By carrying out a research project and presenting his work in the form of thesis, the student will be able to:

- (i) identify a relevant research question;
- (ii) conduct a critical review of literature;
- (iii) formulate a hypothesis;
- (iv) determine the most suitable study design;
- (v) state the objectives of the study;
- (vi) prepare a study protocol;
- (vii) undertake a study according to the protocol;
- (viii) analyze and interpret research data, and draw conclusions,
- (ix) write a research paper.

5.2 Guidelines

While selecting thesis topics, following should be kept in mind:

- (i) the scope of study should be limited so that it is possible to conduct it within the resources and time available to the student;
- (ii) the emphasis should be on the process of research rather than the results;
- (iii) the protocol, interim progress as well as final presentation must be made formally to the entire department;
- (iv) only one student per teacher/thesis guide;

(v) periodic department review of the thesis work as per following schedule:

- End of 4 months - Submission of protocol
- 6 months prior to examination - Final presentation and submission

6. Assessment

6.1. General principles

- The assessment should be valid, objective, and reliable.
- It must cover cognitive, psychomotor and affective domains.
- Formative, continuing and summative (final) assessment should be conducted in theory as well as practical/clinical. In addition, thesis should be assessed separately.

6.2. Overall weightage

Internal assessment	40% [equally divided into theory and practical domains]
Final summative examination	60% [equally divided into theory and practical domains]

6.2.1. Formative

The formative assessment should be continuous as well as end-of-term. The former should be based on the feedback from the senior residents/registrars and the consultants concerned. End-of-term assessment should be held at the end of each semester (upto the 5th semester). Formative assessment will not count towards pass/fail at the end of the program, but will provide feedback to the candidate.

6.2.2. Internal assessment

Proposed Internal Assessment

Items	Weightage (%)	Timing of assessment
1. Personal attributes*	15	Ongoing after each clinical posting
2. Clinical skills and performance	40	-do-
3. Academic activities (journal club, seminars, case discussion)	15	-do-
4. End of term theory examination** (I year, II year, 2 years and 9 months)	15	End term
5. End of term practical exam (Case - 50%, Spots/OSCE - 25%, Viva - 25%)	15	End term

* Personal attributes

- *Availability:* Punctual, available continuously on duty, responds promptly to calls, takes proper permission for leave.
- *Sincerity and motivation:* Dependable, honest, admits mistakes, does not falsify information, exhibits good moral values, loyal to institution, has initiative, takes on responsibilities, goes beyond routine work, exhibits keen desire to learn.
- *Diligence and performance:* Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management (where applicable), skilled in procedures, proficient in record keeping and file work.
- *Academic ability:* Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.
- *Inter-personal skills:* Has compassionate attitude towards patients, gets on well with colleagues and paramedical staff, respectful to seniors.

**Syllabus for end term theory assessment

I year - General pediatrics, growth and development, nutrition, Bio-statistics, infectious disease, neonatology.

II year - Approach to clinical disorders and emergencies.

III year - Whole syllabus.

6.2.3. Summative Assessment

- Ratio of marks in theory and practicals will be equal.
- The pass percentage will be 50%.
- Candidate will have to pass theory and practical examinations separately.

6.2.3.1. Theory

Paper 1:	Basic sciences as applied to pediatrics	100	marks
Paper 2:	Neonatology and community pediatrics	100	marks
Paper 3:	General pediatrics including advances in Pediatrics relating to Cluster - I specialities	* 100	marks
Paper 4:	General pediatrics including recent advances in pediatrics relating to Cluster -II specialities	100	marks

* **Cluster - I** - Nutrition, growth and development, immunization, infectious disease, genetics, immunology, rheumatology, psychiatry and behavioral sciences, skin, eye, ENT, adolescent health, critical care, accidents and poisoning.

** **Cluster - II** - Neurology and disabilities, nephrology, hematology-oncology, endocrinology, gastroenterology and hepatology, respiratory and cardiovascular disorders in each paper there should be 10 short essay questions (SEQ)

6.1.3.2. Practicals / Clinicals**- 300 Marks**

Two external and two internal examiners should conduct the examinations.

CLINICALS

Case I	-	long case	(150 marks)	1 hour
Case II (newborn)	-	short case	(50 marks)	}
Case III	-	short case	(50 marks)	} 1 hour
Case IV (ambulatory/emergency care)		short case	(50 marks)	}

VIVA**- 100 Marks**

1. Radiology /ECG/ECHO : 25 Marks
2. Drugs Vaccine : 25 Marks
3. Nutrition/ Instruments : 25 Marks
4. Investigations : 25 Marks