CURRICULUM FOR M.S. (Paediatric Surgery)



PEOPLES UNIVERSITY OF MEDICAL & HEALTH SCIENCES, NAWABSHAH, SBA

Send Ali Raza Britisz. For correction 29/10/15

CONTENTS

Section - 1 INTRODUCTION

Peoples University of Medical & Health sciences Nawabshah established in 2010. The PUMHS has only recently been made a University & revised courses of Undergraduate Education with Postgraduate Diploma Courses, Postgraduate Degree Courses and Ph.D. Courses in Faculties of Medicine Surgery & allied subjects are revised.

In this document *Statutes* and *Regulations* regarding Scheme of the Course, admission, educational objectives of the Curriculum, research outlines, and the Log Book and Examinations of the postgraduate degree course of M.S. (Paediatric Surgery) Course are presented.

In this, the need to provide room for innovations to meet the changing environment have been acknowledged and identified. The University is strongly committed to the proposition that local circumstances cannot justify, recognition/approval of a substandard course.

A lot of hard work by the Dean and Members of the "Faculty of Medicine and surgery & allied" of the University, has enabled the University to come up with up to date and a modern curriculum. Very useful and able assistance was provided by the members "in revising the Curriculum of courses of MD/MS.MDS/M.Phil."

Phase I (One Year)

Below Greeps & Suits

R PHASE II (Three Years)

Steetion I Educational Objectives of Padvatoric Supply & Robations.

Basic training of A

Paediatric Surgery 2.5 months.

Research Methodology and Biostatics

- Compulsory rotation in General Surgery & Paeds medicine for 6 months
- · Logbook assignments, assessments
- Research

Section - 2

DURATION AND SCHEEM OF M.S. (Paediatric Surgery)
Course.

Duration; Four (4) years course

Advanced Professional Education in Paediatric Surgery

Section – 3 AIMS AND OBJECTIVES OF M.S. (Paediatric Surgery) Course.

The aims and objectives of these higher medical educational programs are, to Identify, train and produce specialists in this field

1. Who accept Paediatric Surgery in its full sense as a life long activity and that he/she is prepared to invest time and effort to acquire, maintain and further improve his/her own

- knowledge and skills. Should be capable of contributing to the development of the system
- 2. To help them develop a critical appreciation of techniques, procedures carried out in Paediatric Surgery; an understanding of scientific methods, reliability and validity of observations and the testing of hypothesis.
- 3. To develop in the candidates the ability and willingness to adopt a problem solving approach to manage clinical situations.
- 4. To develop in the candidates the ability to plan, interpret and implement a management program with due regard to the patients' comfort and economic factors.
- 5. To develop in the candidates his / her awareness of the role of specialists of Paediatric Surgery in health/ rehabilitation / welfare teams and his/her willingness to work cooperatively within such teams.
- 6. To develop in the candidates the awareness that he/she has to create his/her own professional impact as a capable Specialist/ Teacher / Scholar of Paediatric Surgery in the contemporaries.

Section - 4

REGULATIONS REGARDING ADMISSION FOR M.S. (Paediatric Surgery) Course.

The Registrar of the University will admit students in the abovementioned course.

4.1. Admission Criteria;

4.1. (a) General Requirements

- . 1- MBBS from a recognized University.
- . 2- One-year house job after graduation in a recognized institution.
- . 3. Part -1 MS exam: passed

4.1. (b) Special Requirements

- . (i) The number of candidates will not exceed the number of training posts available. The Evaluation Certification by the Professor/Head of the Department/Unit that candidates have been evaluated and found fit for post graduation in the specialty is an essential requirement for admission.
- . (ii) If the number of candidates does not exceed the number of available slots, the admission will be based upon the abovementioned general requirements and the recommendations of the Supervisor. .

After registration/enrollment at the University, the student will submit his / her joining through his/her supervisor and will be admitted in the office of the Vice Chancellor

4.2. REGISTRATION (ENROLMENT) FEE. The candidate will be registered with the University and The Registrar will maintain a record of Registration. The University will charge Rais as Registration Fee to be paid at the time of application. (The Fee can be changed from time to time by the Concerned Board of Medicine / surgery).

. 4.3. ADMISSION FEE. Admission Fee of Rs will be deposited in the office of the Vice Chancellor at the time of Admission. (The fee can be changed from time to time by the concerned

Board of Medicine & surgery)

- Course. Will pay Rs. as tuition fee for the phase-1 of their courses. (Instructions during year-1) at the Vice Chancellor's Office.
- Chairmen of the Departments/ Deans of all faculties will provide a list of the Title of Courses and No. Of students they can admit in each course in each year in all the Departments for record purposes and of the Registrar of the University of Punjab for admission purposes.

Section - 5

CURRICULUM CONTENT AND ORGANIZER FOR M.S. (Paediatric Surgery) Course.

I. PHASE-I OF THE COURSE.

- 1. Basic Concepts and Skills for M.S. (Pediatric Surgery)
 Course.
- 2. Research Methodology and Biostatistics.
- 3. List and Educationional Objectives of the rotation in Surgery for six months.
- 4. Educational Objectives for,
- i. Paper-1 of Intermediate Evaluation "Principles of Surgery/PaediatricSurgery"
- ii. Paper-2 of Intermediate Evaluations. "Basic Science Education".

II. PHASE-II OF THE COURSE.

- 1. Educational Objectives of Paediatric Surgery (Theory and Skills)
- 2. Educational Objective of rotations in Surgery and Paediatrics, for six months.

i) Syllabus for Phase - I Basic Science Education M.S. (Paediatric Surgery) Course. Anatomy

Anatomy Detailed applied anatomy of:

Abdomen and Pelvis (abdominal wall; diaphragm) Thorax (esophagus; vagus) Genitalia and Perineum Head and Neck (including cranial nerves)

General anatomy of:

Limbs (axilla and femoral triangle) Cranium and Brain Spine and Spinal Cord

Surgical anatomy of:

Adrenal Glands Thyroid Parathyroids Thymus Kidney

Liver Extra hepatic bile ducts and Porta Hepatis Breast Cervical lymph nodes Central venous system Placenta and Umbilical Cord Pelvic Nerve Plexus Enteric Nervous system

General Histology of:

Respiratory system Alimentary system Endocrine system Integument Lymphatic and Reticulo endothelial system

Growth changes from birth to adolescence Embryology

General Embryology:

Gametogenesis First week of development -

Fertilization to implantation Second and third weeks of development –

Bilaminar and Trilaminar discs; Fourth to eighth weeks of development –

Embryonic period Third to tenth months of developments -

Fetal period Congenital Malformations and their causes:

Knowledge of experimental teratology Special Embryology

Digestive tube and its derivatives –

Cranial part of the foregut; caudal part of the foregut; midgut; hindgut; liver, spleen; pancreas; pharynx and its derivatives; extra hepatic and biliary ducts

Coelomic cavity and mesenteries; Diaphragm; anterior body wall

Urogenital system -

Urinary system; genital system; ovary and testis; sex determination

Respiratory system and great vessels -

Trachea and lungs; pulmonary circulation; pericardium; thoracic and abdominal aorta; superior and inferior vena cava

Nervous system: Spinal cord; brain; autonomic nervous system

Miscellaneous areas:

Fetal Medicine:

Anomalies of situs and symmetry; teratoma; conjoined twins

Prenatal diagnosis Surgical conditions: Management; prognosis; counseling Antenatal in-utero surgical interventions: (Feral Surgery)

Curriculum Contents and Organizer for M.S. (Paediatric Surgery) Course.Phase-1.

- 1) Basic concepts and skills for M.S. (Paediatric Surgery) Course.
- . a) History of Paediatrics
- . b) Professional values, student teacher relationship
- . c) Orientation of OPD, Minor surgical procedures, ward and learning resources
- . d) History taking and case presentation
- . e) Examination with its description
- 2) Research Methodology and Biostatics
- . a) An understanding of the development of research protocol synopsis.
- . b) The ability to design and execute a research project
- . c) The ability to analyze critically and scientifically articles and review current practice by following appropriate text and journals. Develop the ability to communicate scientifically.
- . d) Develop an understanding and ability to the use of diagnostic techniques and therapeutic measures.

3) List of educational objectives of the Rotations

- a) Rotation of General Surgery of a student of MS Paediatric Surgery in learning the basic relationship between General Surgery & PaediatricSurgery and better understanding the Historical background and principles of management of surgical diseases and concepts in Adults for a wider understanding particularly with a perspective to be exposed to common conditions in adult population not likely to be encountered in Paediatric surgical practice.
- . b) Rotation to Paediatric Medicine The rotation will enable the trainee to be exposed to the:

Principles of management of the medical conditions in neo-nates and children likely to be encountered in the overall management plan of paediatric surgical patients.

General:

Wound healing

Surgical infections and sepsis (including Hydatid disease, tetanus, gas

(Gangrene); surgical sepsis, principles of antibiotic use in Paediatrics

Shock, as applied to paediatric patients

Resuscitation and pre- and post-operative care of infants and children of all ages, including general care of the neonate, transport of the surgical neonate, intravenous requirements, intravenous nutrition, and management of respiratory failure

Trauma:

All aspects, with emphasis on specific problems in the paediatric age group

Emergency management and transport

Skeletal injuries, especially of elbow area, femur, nose, pelvis; injury to the immature skeleton

Soft tissue injuries, including nerve and tendon injuries Head injuries; spinal cord injuries

Thoracic injuries Abdominal injuries Urinary tract injuries; Perineal injuries; renal injuries vascular injuries

Burns Paediatric Surgical training and teaching in phase 1

Ethical Considerations in Paediatric Surgery

The ethics of surgery in newborn infants selective non-treatment

Scientific Basis of Paediatric Surgical Practice Fetal physiology and pathology Post natal maturation of organ function

Neonatal physiology: metabolism; pathology in relation to surgical conditions-

Reactions to stress (surgery; trauma; hypothermia) Temperature regulation

Fluid and electrolyte balance Nutrition

Physiological disturbance and pathology of those conditions recognized as belonging to Paediatric Surgery

4) Educational objectives for subject of

- . i) Paper -1 Principals of Surgery.
- . ii) Paper -2 Basic Science Education

PHASE II OF THE COURSE.

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Neonatal birth trauma – head, viscera, nerves, limbs. Prevention of trauma in children

Non-accidental trauma in children Inguino-Scrotal Region:

Inguinal hernia Hydrocele

Undescended testis

The 'acute' inguino scrotal problem (torsion of testis and appendages,

Epididymo-orchitis, idiopathic scrotal edema and infections, trauma)

Varicocoele Genito-Urinary Surgery:

Presentation, diagnosis, investigation and treatment of urinary infection

Developmental anomalies of kidneys and ureter (including dysplasia and hypoplasia, hydronephrosis, cystic disease, duplex systems, mega ureters, ureteric reflux, ureterocoeles; ectopic ureters)

Development anomalies of bladder and urethra (including diverticula,

Posterior urethral valve and other urethral obstructions, urachal anomalies,

"Triad" syndrome, hypospadias, epispadias, ectopia vesicae, vesico-

Intestinal fissure, penile anomalies)

Urinary features of spinal Mylomeningocele

Urinary calculi

Urinary incontinence, methods of urinary diversion

Hematuria Circumcision; meatal ulcer and stenosis

Diseases of female genital tract (including uro- genital sinus, muco- haemato/hydro/uro/pyocolpos, gynecology in adolescence, labial adhesions, vaginal anomalies)

Intersex

Neurogenic bladder Abdominal Surgery:

Neonatal alimentary conditions (including Malrotation, volvulus, atresia and stenosis, meconium ileus and peritonitis, Hirschsprungs disease, meconium plug, gastroschisis, exomphalos, necrotizing Entrerocollitis

Congenital ano-rectal anomalies

Hirschsprungs disease, intestinal neuronal dysplasia at all ages

Appendicitis

Primary peritonitis

Intussusception

Duplications

Meckle's diverticulum

Inflammatory bowel diseases (ulcerative colitis and Crohn's disease)

Pyloric stenosis

Constipation, large bowel dysmotility disorders, degenerative leiomyopathy)

Anal and rectal conditions (including abscess, fissure and fistulae, prolapse, polyps)

Bleeding from the alimentary tract

Acute abdominal pain Recurrent abdominal pain Foreign bodies Umbilicus (sepsis, hernia, discharges)

Jaundice, surgery of neonatal and infant biliary system Liver and renal transplantation

Portal hypertension Liver cysts and malformations

Diseases of spleen and Splenectomy, complications indications

Indications for and contra- wikicalling

Surgery of adrenal glands and retro peritoneum

Retroperitoneal cysts and tumors (including mesenteric and omental cysts)

Head, Neck, Face, Mouth and Jaw Surgery:

Lymphadenopathy (including pyogenic and tuberculous adenitis, malignancy)

Lateral and mid-line swellings of the neck (including thyroglossal cyst, thyroid gland, dermoid cysts, branchial sinus and cyst, salivary (sialectesis, infection, calculi, tumor), cystic hygroma, lymphangioma, ranula)

Torticollis, sternomastoid tumor

Face, mouth and jaw (including lymphangioma, macroglossia, micronathia, Pierre-Robin Syndrome, tongue-tie, maxillary frenulum, mucus cysts, tumors and cysts of maxilla and mandible, adenoids, pre-auricular sinus and tags, tonsils, dermoid cysts)

Dental infections, cysts and swellings

Indications and management of tracheostomy, Thorax, Chest Wall and Oesophageal Surgery:

Causes of respiratory distress and management of respiratory failure

Diaphragmatic hernia

Haemothorax, pneumothorax, Chylothorax and empyema

Foreign bodies, esophagoscopy, bronchoscopy Mediastinal tumors Chest wall deformities

Esophagus (atresia, caustic ingestion, stricture, achalasia, gastro-

Esophageal reflux, hiatus hernia) Breast swellings in children Palmar hyperhidrosis

Skin and Subcutaneous Tissues:

Limbs and Spine:

Haemangioma Lymphangioma

Naevi, verrucae and miscellaneous lesions Tumors

General principles of repair of skin defects and lacerations

Causes and investigations of limp

The acute limb (especially osteomyelitis, septic arthritis)

Spina Bifida and its varieties Meningomyeloces

Hydrocephalus Sacral and dermoid sinus Sacro-coccygeal tumors

Musculoskeletal system

Detailed knowledge of clinical features, diagnosis and prognosis, but principles only of treatment (especially operative treatment of – congenital dislocation of hip, talipes, metatarsus varus, postural deformities, genu varum and valgus, osteochondritis, arthrogryposis, congenital limb deformities, Syndactaly, polydactyly, bone cysts

Principles, indication and techniques of minimal invasive surgery as applied to:

Thoracoscopic surgery, lung biopsy and surgery, esophageal surgery, pleural surgery

Abdominal Laparoscopic surgery. Specific Paediatric Surgery /allied subjects

A less detailed knowledge, with emphasis on clinical features, diagnosis, prognosis, and principles only of treatment of (especially operative treatment) of the following:

General:

Principles of immunology, with application in paediatrics

Principles of radiology and organ imaging diagnosis and techniques.

Principles of genetics and sexual counseling especially as applied to

Paediatric conditions, and the handicapped

Relevant sociological, family and psychological factors in Paediatrics.

Including effects of hospitalization

Normal and abnormal coagulation of blood

Principles of microsurgery Congenital Heart disease

Genito-Urinary Surgery (See also 1.5.4) Peritoneal and hemodialysis

Neurosurgery

Management of renal failure, Surgery of hypertension

Intracranial infections and hemorrhage Cranial bifida, encephalocele

Dermoid cysts of cranium Craniostenosis

Surgical complications of meningitis, Spinal tumors and cysts.

Cardio-Thoracic Surgery, Cardiac Distress and cyanosis in infants.

Principles of extra and intra-cardiac surgery with special reference to patent ductus arteriosus, coarctation of aorta, stenosis, vascular rings, septal defects, Fallot's tetralogy, transposition of vessels, anomalous pulmonary venous flow, congenital mitral valve deformities

Principles of lung surgery, with special reference to chest drainage, post-operative lung function, lung cysts, abscesses, agenesis, emphysema, bronchiectasis

Plastic Surgery, Principles of skin grafting.

Cleft lip and palate Choanal atresia

Principles of reconstructive surgery of hand, face, ears, lips and jaws

Paediatric Surgical Oncology (See also 1:6) General – paediatric tumors:

Epidemiology; aetiology; clinical aspects; pathology and principles of diagnosis

Multidisciplinary Management

Principles of chemotherapy Principles of radiotherapy Principles of paediatric oncological surgery

Common Paediatric Malignant Tumors

Neuroblastoma; other renal tumors. Neuroblastoma Hepatoblastoma; hepatoma Hodgkin's and non-Hodgkin's lymphoma, Rhabdomyosarcoma

Other soft tissue sarcomas Malignant bone tumors in children Teratoma Tumors of the testis and spermatic cord

Principles of Total Care of the Patient

Venous access; central catheters and ports the surgical complications of treatment

LOGBOOK AND CONDUCT OF THE EXAMINATION

Examination: 2 Components - written and oral

Written: 2x 3-hour papers

(i) (ii)

Oral:

General Paediatric Surgical practice Specific Paediatric Surgery

Clinical component: Minimum 2x long and short cases (mix could include an OSCE; simulated cases)

Non-clinical component:

- . (i) Operative Paediatric Surgery
- . (ii) General Paediatric Surgical Practice

Examiners

A pool of examiners will be recommended by the University, Association of Paediatric Surgeons and will consist of senior, registered Paediatric Surgical Practitioners. The inclusion of suitable overseas Paediatric Surgeons and General Surgeons as examiners could be required for external control and assessment purposes.

Unsuccessful candidates will be required to re-write the examination

Section - 6 RESEARCH THESES

During course on Research Methodology and Biostatistics held during Phase-I of the Course, the candidate is expected to develop synopsis of Research.

GUIDELINES FOR PREPARATION OF SYNOPSIS

The applicants should organize thesis synopsis to address the following points: - a) Title:

. c) Literature review

[.] b) Introduction

- . d) Objectives
- . e) Significance
- . f) Plan
- . g) Methodology
- . h) Bibliography
- : Should clearly manifest why the present Work is undertaken.
- : Place the project in academic context by referring to the major work by others on the topic.
- : Define clearly the aims of the research proposal.
- : Explain the significance of the proposal in the field and for the country.
- : Give year wise tentative plan of the work.
- : Explain the approach and methods he will follow.
- : Will cite up to date references.

Section - 7 LOG BOOK

Total marks for whole training program:

Marks for each year:

Log Book will consist of following parts: -

- 1. Teaching assignments: Lectures/Demonstrations/Tutorials
- 2. Written assignments: Review articles/papers
- 3. Attendance and Paper Presentation in Conferences:

- 4. Technical Skills:
- 5. Affective and Interpersonal Skills

Log Book will signed by the Supervisor / Co-Supervisor regularly. The Supervisor will perform evaluation of Log Book at the end of each year.

Section - 8 EXAMINATIONS

- 1. ENTRY EVALUATION; If the number of candidates will be more than the available seats, then the University may hold entry evaluation, every year on the date as announced by the controller of examination of University. The examination will consist of Written Paper or Interview or both, as approved by the Boards of Studies of Medicine and Dentistry. The Fee for Entry Evaluation will be determined by the Board of Studies of Medicine and Dentistry
- 2. LONGITUDINAL EVALUATION (Log Book, Assignments, Assessments). Through out the length of the course, the performance of the candidate will be recorded on the Logbook. The Log Book will reflect the performance of the candidate on following parameters.
 - i- Year wise record of the competence of acquired technical skills.
 - ii- Year wise record of the performance in the assignments.
 - iii- Year wise record of the evaluation regarding affective and interpersonal behaviors.
 - iv- Year wise record of attendance of Journal Clubs, Conferences, and Lecturers attended.
- 4. The Log Books will be developed and approved by

Committee of Specialty Faculty in each subject. The performance of the candidate will be evaluated on yearly basis. Marks for each year Total Marks for whole of Training Program The evaluation will be made by the Supervisor (in consultation with the Co-Supervisor if appointed)

5. REASEARCH THESIS.

- (a) Characteristics of the Research Topic. The Research Topic in paediatric surgery should address 20% to the Related Applied Basic Sciences. The research Topic must consist of a reasonable sample size and sufficient No. Of Variables to give training to the candidate to conduct research to collect data, analyze data and record and discuss results, drawing conclusions and thus test the hypothesis.
- (b) Preparation of Synopsis. The applicants should organize thesis/synopsis according to the guidelines mentioned in the Annex II of the Revised Regulations of the University for the specific course.
 - (After approval, by the Committee the synopsis will be submitted to the respective Board in the University for final approval by the Vice Chancellor of the University.

Submission of Thesis.

Synopsis of research project will be submitted during year-1 of the course within two months of joining the course. The Synopsis will be submitted through the supervisor to the Principal the following committee will evaluate Dean of the Speciality. The synopsis.

- 1. Principal / Dean or his representative.
- 2. Supervisor of the student

Director medical Research.

- 3. Prof. Pathology
- 4. One Prof. appointed by the Principal/Dean

Chairman Member/Secretary Member Member

The Thesis must be bound in accordance with the specifications mentioned in the Armex ill of the Revised Regulations for the Programs.

Four (4) copies of the Thesis must be submitted at least 6-months before the commencement of the written and oral Examination.

The minimum duration between approval of synopsis of research and submission of thesis should be 02 years; the maximum duration will be 04 years.

The Thesis will be submitted along with Bank Challan Form of Rs. () paid in the account of the University: Director Programme Studies of Committee o

Application for Thesis Evaluation recommended by the Supervisor.

5.5.(a)

The Evaluation of the Thesis.

The thesis will be examined by three examiners appointed as examiner for the Final Examination of MS (Paediatric Surgery) (Part-2 Examination). Each of the examiners will be provided a copy of the Thesis at least Three (3) months before the commencement of examination.

The Candidates will defend their Thesis in presence of their supervisor/
Co-Supervisor during the Part-2 Examination. Total Marks for Thesis
Evaluation will be 200. The required pass marks with two examiners would be 66 each and 68 with the head Examiner.

FINAL EVALUATION; (Part-2 Examination) Eligibility to appear in Part-2 Examination.

- . 1- The candidate has completed the prescribed period of training of the course.
- 2 The candidate has passed (Part-1 Examination).
- 3- The candidate had submitted the Research Thesis at least 6-months before the date of commencement of oral examination.
- . 4- Certificate by the Supervisor that the Log Book of candidate is complete in all aspects and is signed by the Co-Supervisor and the Supervisor. The candidate must secure at least 50% marks in log book evaluation by the Supervisor. The original Log Book will be presented by the candidate during Practical/Oral examination.
- . 5- The application form for Part-II MS (PaediatricSurgery) examination with recommendations of the Supervisor.
- 6- The Bank Challan Form for the payment of the Examination Fee of Rs. (.) as fraids.

The Board of Studies of Medicine/Dentistry can change the examination fee from time to time.

- 5. (b) Components of the Part-2 Examination.
- . 1- Theory (300 Marks)
- . 2- Practical/Oral (300 Marks)
- . 3- Thesis. (200Marks)
- . 4- Log Book Evaluation (200 Marks) Total Marks = 1000 (i) Theory. (Three Papers) (100 Marks and 3-hrs. each Paper) Two Papers in Paediatric Surgery One Paper in Special Pathology of Paediatrics (ii) Practical / Viva

(iii) **Defence of the Thesis.** (200 Marks). The candidate will be required to defend his thesis, in the presence of the Supervisor, or Co-Supervisor or representative of the Supervisor.

5. (c) Contents of the Theory Papers.

Paper 1 of Specialty – 50 % Long Essays and 50 % short essays. Paper 2 of Specialty- 50% Long Essays and 50% short essays. Elective / Pathology- 50% Long Essays and 50% short essays.

5. (d) Number of Examiners.

The Final Evaluation (Part-2 Examination) will be conducted by a board of three examiners.

The Board will consist of one Pathologist and two examiners of the specialty. The senior examiner of the specialty (Paediatrics) will be the chairman of the board.

All examiners have equal functions except the chairman who will be responsible to conduct the examination process and send result to the controller university.

5. (e) Result.

The candidates who will pass their Theory, Oral/ Practical and will successfully defend the Thesis will be declared pass.

The Candidates who will pass in Thesis, but fail in Theory or Oral or both will re- appear only in Theory and Oral again.

The Candidates who will pass Theory and Oral, but fail Thesis will re-appear to defend their Thesis.

To pass the candidate must obtain 60% marks in each of 3 components.

To pass with distinction, the candidate must obtain overall marks should be 80 % or above.