بسم الله الرحمن الرحيم

CURRICULUM / STATUTES/ REGULATIONS

FOR

5 YEARS MS Paediatric Surgery

Faisalabad Medical University

Faisalabad

Contents

Contents 2

Section A 5

VISION STATEMENT: 5

MISSION STATEMENT 5

STATUTES 6

Nomenclature 6

Course Title: 6

Training Centers 6

Course structure: 6

1. Core knowledge: 6
2. Clinical Training 6
3. Research and Thesis writing. 6
4. Mandatory Workshops 6
5. Specialty Specific workshops 7

Section B: 9

Admission Criteria 9

Registration and Enrollment 9

Accreditation Related Issues of the Institution 9

A. Faculty 9

B. Adequate resources 9

C. Library 9

Freezing of Program and Leave Rules: 10

Section C: 11

AIMS AND OBJECTIVES OF THE COURSE 11

AIM 11
LEARNING OBJECTIVES: 11
GENERAL OBJECTIVES: 11
SPECIFIC LEARNING OUTCOMES: 13
Content list: 14
Section D: 25
PROGRAMME FORMAT 25
SCHEME OF THE COURSE OF MD/MS PROGRAMME: 25
Section E: 27
Assessment Plan: 27
Components of Mid-term Examination 28
Components of Final Examination: 28
Intermediate Examinations: 28
Eligibility Criteria: 28
Intermediate Examination Schedule and Fee: 29
Written Examination: 29
Declaration of Results 29
Clinical, TOACS/OSCE: 30
Declaration of Results 30
Final Examination 30
Eligibility Criteria: 31
Final Examination Schedule and Fee: 31
Written Part of Final Examination 31
Declaration of Results 32
Clinical, TOACS/OSCE: 32
Declaration of Results 33
Synopsis and Thesis Writing: 33

Submission / Evaluation of Synopsis 33
Submission and evaluation of Thesis Evaluation (300 Marks) 34
Continuous Internal assessment 34
Attendance 34
Presentations 35
Task evaluation 35
Continuous Internal Assessment format (100 Marks) 35
TOOLS OF ASSESSMENT FOR THE COURSE: 36
Section F 38
Award of MS Paediatric Surgery Degree 38
Log Book 39
Portfolio 39
Section I 40
Paper Scheme 40
Written Paper Intermediate Examination: 40
Written Paper Final Examination: 40
Section J 43
Resources and references (books and other resource material) 43
Section K 44
List of authors and contributors 44

Section A

VISION STATEMENT:

Faisalabad Medical University has been established since 05-05-2017 for purpose of imparting better medical education and encouraging and arranging extensive research and publication in the field of medical science. The vision of university is:

"Striving to achieve national and international stature in undergraduate and postgraduate medical education with strong emphasis on professionalism, leadership, community health services, research and bioethics"

MISSION STATEMENT

The mission of the University is:

"Educate Healthcare professionals to prevent, diagnose and treat human illnesses to practice evidence-based medicine with focus on lifelong healthcare in order to meet the challenges of community needs and competitive medical profession at the same time"

STATUTES

Nomenclature

The name of degree programmer shall be MS Paediatric surgery.

Course Title:

MS Paediatric Surgery

Training Centers

Department of Paediatric Surgery in Affiliated hospitals of Faisalabad Medical University, Faisalabad.

Duration of Course

The duration of course shall be five (5) years with structured training in a recognized department under the guidance of an approved supervisor.

Course structure:

1. **Core knowledge:** Competency based learning for trainees. 2 exams to be conducted by university. Continuous internal assessment to be included throughout the Programme which is conducted by the department and will carry weightage in final assessment.
2. **Clinical Training** in Paediatric Surgery Department
3. **Research and Thesis writing.**
4. **Mandatory Workshops** throughout the course of programme will be conducted. The basic workshops will be attended by all trainees from all specialties and will be evenly distributed throughout the course:
    1. **Communication skills**
    2. **Research synopsis and thesis writing skills**

3. **Basic Biostatistics and Research Methodology**

4. **Information Technology Skills**

5. **Initial Life Support (ILS)**

At the end of each workshop, assessment will be done regarding the workshop and certificates will be issued to passing trainees only. The workshops will be conducted by the University and will be paid as in all post-graduate programmes and supervised by the department of Medical Education, FMU, Faisalabad. The trained certified coaches/teachers will be invited and they will get incentive from the university. All the interested trainers will contact the department for inclusion in trainers list.

Feedback of the facilitators will be recorded for the continuation of the process. Medical education department will issue yearly planner for these workshops in the light of curriculum document. University will certify it.

5. Specialty Specific workshops

- Basic surgical skills

The course is structured in three parts:

Part I: Candidate will start his/her training in Paediatric Surgery department from 1st day till 6 months. Candidate will gain basic knowledge of the selected specialty i.e., anatomy, physiology and orientation to the subject, basic principles, history taking and case presentation, inpatient and out-patient care. During this time the candidate will select a topic for synopsis, complete his/her synopsis and will attend the mandatory workshops.

Part II: From 6 months till 2 years, he/she will do a rotational training in General surgery under a supervisor allocated in surgical department. The candidate shall undertake clinical training in fundamental concepts of general surgery from 6 months till 2 years. During this period, the candidate must submit the synopsis for approval. At the end of 2nd year, the Intermediate examination shall be held in fundamental concepts of general surgery. The clinical training in Paediatric Surgery shall be rejoined from 3rd year onwards in Paediatric Surgery department.

Part III is structured for 3rd, 4th and 5th calendar years in MS Paediatric Surgery department .The candidate shall undergo training to achieve educational objectives of MS Paediatric Surgery department, along with rotation in relevant fields

Section B:

Admission Criteria

Central induction Policy as per Government rules.

Registration and Enrollment

The number of PG Trainees/ Students and Beds to trainee ratio at the approved teaching site will be as per policy of Pakistan Medical & Dental Council

The University will approve supervisors for MS courses.

Candidates selected for the courses after their selection and enrollment shall be registered with FMU as per prescribed Registration Regulation.

Accreditation Related Issues of the Institution

A. Faculty

Properly qualified teaching staff in accordance with the requirements of Pakistan Medical and Dental Council (PMDC). Supervisors will be decided by the university according to the set standards and rules.

B. Adequate resources

The university will provide adequate resources Including class-rooms (with audiovisual aids), demonstration rooms, computer lab, clinical pathology lab, theaters, instruments and other equipment etc. for proper Training of the residents as per their course outcomes and objectives.

C. Library

Departmental library should have latest editions of recommended books, reference books and latest journals (National and International).

Freezing of Program and Leave Rules:

Freezing of training, Maternity leave, ex Pakistan Leave and Extra Ordinary Leave etc. would be allocated through the office of Dean Postgraduate to the competent authority

Section C:

AIMS AND OBJECTIVES OF THE COURSE

AIM

The aim of five years MS programme in Paediatric Surgery department is to train residents to acquire the competency of a specialist in the relevant field so that they can become good clinicians, teachers, researchers and community health provider in their specialty after completion of their training according to the global standards.

LEARNING OBJECTIVES:

GENERAL OBJECTIVES:

MS Pediatric Surgery programme must enable a resident to:

- Accept the speciality of the programme in its full sense and be ready to spend time and efforts to gain, sustain and in addition enhance their knowledge & skills.
- Apply relevant knowledge and skills to clinical practice.
- Maintain currency of knowledge.
- Critically evaluate new technology.
- Undertake appropriate clinical skills & procedures safely and effectively.
- Maintain consistency in demonstrating clinical skills.
- Have up to mark clinical skills and procedural knowledge at defined level of training.
- Show good clinical care keeping in mind patient's physical comfort and socioeconomic status.
- Carry out procedures with manual proficiency.
- Individualize clinical care and procedure according to case scenario.
- Continuously improve themselves by critical self-analysis.
- Maintain and acquire new skills.

- Build and endorse effective management plans.
- Recognize the clinical findings, precisely make differentials and provisional diagnosis.
- Formulate a final diagnosis based on investigations and manage accordingly.
- Effectively identify and manage complications.
- Identify the pros and cons, mode of action of currently available and novel treatment options.
- Educate the patient regarding disease course, prognosis and available treatment modalities.
- Choose best available investigations and monitoring techniques in a cost effective and useful way.
- Consider and interpret required diagnostic imaging and investigations.
- Actively analyze the pros and cons of different available investigations.
- Ensure the patient's (and/or attendants) participation in choosing the procedure by effectively communicating its details and risks.
- Overcome the linguistic, religious and cultural barriers by good communication.
- Establish the co-ordination of healthcare staff for better management of the patient.
- Identify the worth of research and its application to clinical practice by encouraging self-directed learning, recent advances in dermatology.
- Understand the value of self-direction based learning.
- Actively figure out modern modalities in dermatology.
- Play supportive role for other colleague's learning.
- Always follow ethics.
- Practice ethical expectations while attending medico-legal cases.
- Identify the recent medico-legal view of confidentiality and informed consent.
- Be responsible for the management of their patients.
- Apply critical reflective approach to dermatology by his/her professionalism.
- Adhere with recent rule and regulations regarding the workplace harassment.
- Execute self and peer reviewed audit.
- Identify and learn from his/her mistakes.
- Use multidisciplinary approach collaborating with other colleagues for the better management of patients.

- Identify and use available resources in a balanced way between patient's benefit and system resources.
- Maintain the clinical record of patient.
- Guide his/her healthcare teams.
- Promote health awareness among patients.
- Advocate for sufficient health facilities for department.

SPECIFIC LEARNING OUTCOMES:

On completion of the training program, Pediatric Surgical Trainees pursuing an academic pathway will be expected to have demonstrated competence in all aspects of the published syllabus. The specific training component would include the following areas:

1. To establish sensitivity and responsiveness to community needs clearly defined standards of knowledge and skills required to practice pediatric surgery.
2. To cultivate the correct professional attitude and enhance communication skills towards patients ,their families and other healthcare professionals
3. To acquire competence in managing acute emergencies related to general and specific paediatric surgical conditions.
4. To establish differential diagnosis, investigations and management of common pediatric surgical conditions related to:

- General Paediatric Surgery
- Fetal diagnosis, management and surgery
- Neonatal Surgery Emergency Surgery

- Central and peripheral nervous systems
- Head and neck surgery
- Thoracic surgery
- Gastrointestinal surgery
- Genitourinary surgery
- Endoscopic Surgery
- Paediatric Burns

- Paediatric Plastic Surgery
- Common Paediatric Orthopedic problems
- Pediatric Trauma
- Organ transplantation
- Pediatric Tumor Surgery
- Pediatric Gynecology

5. The ability to construct a differential diagnosis, interpret investigations and construct a management plan for common paediatric conditions
6. Undergoing exposure and training in a range of common surgical procedures
7. Developing a number of general and advanced operative skills specific to pediatric surgery
8. Proficiency in handling critical and intensive care surgical illness
9. To acquire Understand the indications, actions and monitoring of drugs used in the pediatric surgical diseases.
10. History taking and clinical skills for children of different ages in paediatric surgery.
11. The clinical skills with appropriate examination techniques for children of different ages related to pediatric surgery.
12. Basic and advanced life support skills in pediatric practice
13. Recognize the value of screening programs and prenatal diagnosis.
14. To establish appreciate the role of family education in pediatric surgical disorders.
15. Acquire management skills in running a Pediatric Surgery Unit
16. They will work under categories of acquisition of relevant knowledge and application to clinical practice, affective communication, self-directed learning, and adopting new trends in pediatric surgery, facilitate learning of others deal with ethical issues, admirable professionalism, working in collaboration, management, leadership and health advocacy.

Content list:

Applied Basic Sciences

Knowledge and understanding of:

Molecular Genetics and Gene Therapy includingClinical Genetics:

- assess child with congenital anomaly, pattern of inheritance, counseling and screening in familial diseases.

Embryology:

- describe mechanisms leading to thedevelopment of congenital malformations with possible causation.

Anatomy:

- basic and applied related to surgicalpatients.

Physiology and Biochemistry:

- appreciate the relationship between surgical diseases/ injuries onfunctioning of various body systems.

Pathology:

- principles of immunology and microbiologyrelevant to paediatric surgical practice.

Pharmacology:

- Actions and toxic effects of drugscommonly used in the management of surgical patients.

Epidemiology and Statistics:

- Critical appraisal ofpublications and reviews. Perform surgical audits.

Principles of General Surgery and its application to Paediatric Population:

Surgical Infections and their Prevention

- Surgically important micro-organisms
- pathophysiology of the body's response to infection

- septic shock
- sources of surgical infection-prevention and control
- principles of asepsis and antisepsis
- aseptic techniques; sterilization; antibioticprophylaxis and therapy of infections.
- Precautions in hepatitis and HIV carriers-special precautions; avoidance of infections transmitted byblood and body fluids.

Surgical Technique and Technology

- Skin preparation
- incisions and their closure
- suture and ligature materials
- patients' positioning; dressings
- disorders of coagulation and haemostasis
- diathermy-principles and precautions
- alternative energy sources; lasers-principles andprecautions;
- pathophysiology of wound healing; classification of surgical wounds; principles of wound management; scars and contracture; wound dehiscence;excision ofcysts and benign tumors of skin and subcutaneous tissues
- principles and techniques of biopsy and cytologicalsampling
- modalities of tissue probe sampling for frozen sectionand paraffin histology,cytology and bacteriology; sampling of body fluids and/ or body excretions for laboratory investigation, interpretation of results
- drainage of superficial abscesses
- basic principles of bowel, urinary tract and blood vessel anastomosis.

Organ Transplantation

- The knowledge of the problems related to organtransplantation
- the possibilities and limitations of this option
- the pathologies that can lead to a transplantation
- the technical aspects of the operation
- the alternatives and contraindications

- pharmacological treatment of rejection
- Follow-up of transplanted children.

Pediatrics:

Pediatrics / Neonatology

- Awareness of common paediatric and neonatal medical conditions related to surgical patients (likeneonatal sepsis, surgical problems of prematurity low birth weight, principals of neonatal ventilationetc) and investigations and recognizing the relatedsurgical complications; ability to assess patient anddifferentiate surgical from non-surgical conditions.
- Understanding the relationships between medicaland surgical pathologies of the child.
- knowledge of high care, intensive care and artificialventilation and management of critically ill pediatric and neonatal patients.

Pediatric Anesthesia

Anesthesiology Techniques including Airway Assessment:

- understanding of different techniques of general anesthesia; their indications and contra-indications
- local and regional anesthesia
- explosive hazards relating to general anesthesiaand endoscopic surgery
- central venous catheterization
- fluid replacement, infusion therapy and parenteralalimentation
- blood transfusion and serology; blood coagulationdisorders and substitution measures blood gas analysis and acid base balance.

Critical Surgical illness and Intensive Care Medicine

The applied basic science relevant to the clinicalassessment of critically ill children and to the

- understanding of disorders of function caused by
- haemorrhage, shock and sepsis
- posttraumatic, preoperative, perioperative andpostoperative intensive care medicine
- cardiopulmonary and pharmacological resuscitation
- single organ failure (heart, liver, kidney)
- multiple system organ failure (pathophysiology and treatment)
- respiratory failure
- pulmonary oedema “shock lung”
- acute respiratory distress syndrome
- septic inflammatory response syndrome;
- malignant hyperthermia.

Pediatric surgery

Pediatric surgical activity covers acute and non-acute diseases and injuries and acute and elective proceduresin children in their pre-, peri-and postoperative aspects.

Pediatric surgery includes surgical pathologies of the central andperipheral nervous system; head, neck and face; respiratory system; gastrointestinal tract; genitourinary system; vascular and musculoskeletal system (including skin); endocrine system; lympho reticular system; orthopedic, traumatology. Basic understandingof the principles of these subspecialties is required. Same applies to pediatric cardiac surgery about which an awareness of surgical pathologies in this area is required.

Preoperative and postoperative care

Screening programs and prenatal diagnosis

- pre-and postnatal screening for the early diagnosisof congenital malformations, preventable diseases and tumours.
- prenatal diagnosis of surgical malformations,modes of presentation, and indications for

- pre-natal intervention, as well as the ability to planpost-natal management.

Laboratory tests

- haematological, immunological, biochemical andhisto-pathological changes that accompany paediatric surgical diseases.
- Interpret and relate knowledge and results toclinical scenarios.

Imaging

- Indications, and interpretation of, imaging techniquessuch as conventional X-rays, sonography, Doppler sonography, CT / MRI / PET scans and radio-isotope techniques in the investigation of the pediatric surgical diseases. Understanding of safety measures inRadiology.
- Knowledge of radiation-sparing indications for X-rayinvestigations.

Endoscopic techniques

- Indications for employing various endoscopic technique such as gastrointestinal, respiratory andurologic endoscopy for diagnostic and therapeutic purposes.
- Handling of endoscopes and sterilization measuresOther instrumental techniques
- Indications required for employing instrumentaltechniques in functional diagnosis, such as anal manometry, urodynamics, etc.

Neonatal Surgery:

- Surgical care of the neonate, pre-term or full term, including comprehensive management of complex congenital malformations in close cooperation with all professionals involved; deep knowledge of
- Fluid-electrolyte management of the baby.

- Knowledge of incidences of associated anomalies andcomplications and risks of transfer from one unit to another.
- Understanding the place of operative and
- Non-operative managements and outcome in short andlong-terms.

Emergency Surgery:

- Care of critically ill children with underlying conditions including coordinated multidisciplinary management
- clinical assessment of severely injured children and to the understanding of disorders of function caused by trauma, thermal injuries, hemorrhage and shock.
- Diagnosis and treatment of the battered / abusedchild.
- Principles of hospital care:
    i. clinical assessment of critically ill and severely injured children - scoring systems
    ii. management of the unconscious child
    iii. monitoring of vital functions in critically illor severely injured children
    iv. initial management of children withmultiple trauma
    v. resuscitation and haemodynamic support
    vi. haemorrhage and shock
    vii. maintenance of airway in severely injuredand unconscious patients
    viii. management of cranial, thoracic, abdominal and pelvic trauma; managementof soft tissue trauma.

General and specialty Pediatric Surgery

Central and peripheral nervous systems

- surgical anatomy and pathology and treatmentoptions of

1) spina bifida
2) hydrocephalus
3) myelomeningocele

4) ventriculo-peritoneal shunts, together withtheir relationship with other organ systems such as gastrointestinal or genitourinary (i.e. neurogenic dysfunctional urinary bladder).

Head and neck surgery

- surgical anatomy and pathology of
- head and neck
- embryology of the congenital malformations of thearea including labiopalatine clefts
- regional lymph nodes
- Access to the great vessels of the neck.

Thoracic surgery

- surgical anatomy and pathology of tracheobronchial tree, chest wall, diaphragm and thoracic viscera
- applied cardio-respiratory physiology
- Interpretation of investigations and understanding of disorders of cardio-respiratory function caused by disease, injury and surgical intervention.

Gastrointestinal surgery

- surgical anatomy of the abdomen and its viscera
- applied physiology of the alimentary system
- Interpretation of investigations, for the understanding of disorders and treatment of congenital and acquired abdominal diseases including infectious and communicable diseaseslike tuberculosis, parasitic diseases and typhoid fever.

Genitourinary surgery

- surgical anatomy of the genito-urinary system
- Applied pathophysiology relevant to: clinical examination, interpretation of special investigations, understanding of disordered function and principles of the surgical treatment of congenital and acquired genito-urinary diseaseand injuries.

Orthopedics & traumatology

- Musculo-skeletal anatomy
- pathophysiology relevant to the locomotor system
- Understanding of disordered locomotor function with emphasis on the effects of trauma Pathophysiology of fracture healing, non-union, delayed union, complications, principles of surgicaltreatment, principles of bone grafting.
- Principles of conservative and operative treatment of fractures.
- Principles of nerve regeneration and nerverepair; peripheral nerve lesions;
- Principles of tendon repair
- Soft tissues trauma; traumatic oedema and thecompartment syndromes.
- Knowledge of common orthopedic conditions likeclubfoot, joints pathologies and infection.

Tumor Surgery

- Surgical oncology, including coordinated multidisciplinary management of the child affectedby tumors
- Applied basic sciences relevant to the understanding of the clinical behavior, diagnosisand treatment of neoplastic disease.
- The role of cancer registers; clinico-pathologicalstaging of cancer and premalignant states
- Principles of cancer treatment by: surgery, radiotherapy, chemotherapy, immunotherapy,hormone therapy
- Terminal care of cancer patients, pain relief.
- Oncological surgical emergencies ie superior mediastinal syndrome, tumour lysis syndrome,neutropenic fever.

Endocrine Surgery

- Interpretation of special investigations
- Assessment and management of children withthyroid, parathyroid, adrenal and pancreatic conditions. Minimally invasive surgery
- Knowledge and skills of therapeutic intraluminalendoscopy, thoracoscopy, and laparoscopy.

Day case surgery

- Understanding of the clinical, surgical and organizational implications of the routine surgicalpathologies amenable to be treated as day case.

Special Areas:

- Vascular Anomalies
- Pediatric Arterial Diseases
- Congenital Heart Disease and Anomalies of the Great Vessels
- Management of Neural Tube Defects, Hydrocephalus, Refractory Epilepsy, and Central Nervous System Infections.
- Major Congenital Orthopedic Deformities
- Congenital Defects of the Skin and Hands
- Conjoined Twins

Teaching and Research

Acquire teaching experience

- Demonstrate the ability to teach medical and paramedical staff by experience and attending specific courses.

Develop research experience

- Analysis of data and understanding of the principles and practice of clinical research,literature research and review.

Section D:

PROGRAMME FORMAT

Sr#	YEAR OF TRAINING	RESPONISIBILITIES
1	1st year	6 Months of Paediatric surgery for Basic Knowledge of subject and synopsis writing and next 6 months for general surgery rotation.
2	2nd year	06 months for general surgery rotation and next 06 months for 03 rotations, 02 months each
3	3rd 4th andfinal year	In Paediatric Surgery ward for research, thesis writing & submission and clinical training in paediatric surgery would be completed. Specialized training covering all paediatric surgery problems.

SCHEME OF THE COURSE OF MD/MS PROGRAMME:

- The duration of course should be **five** years.
- The resident would spend orientation period of first six months in the parent department of paediatric surgery during which one mandatory workshop would be conducted.
- The Intermediate Examination would be conducted after two years of training that includes all mandatory rotations, basic surgical skills and all mandatory workshops.
- Continued training period would span over 3rd, 4th and 5th year during which research and thesis writing & submission and clinical training in paediatric surgery would be completed.

Rotations:

Sr no.	Program Title	Duration	Placement
1	Orthopedic Surgery	2 months	Within 1st two years of training.

2	Anesthesia	2 months	Within 1st two years of training.
3	Choose one from following: 1 Pediatric surgery 2 Plastic surgery 3 Neurosurgery 4 Urology	2 months	Within 1st two years of training.

ELECTIVE ROTATIONS:

3rd, 4th & 5th Year:

For 2 months optional rotations each in any 3 specialty of the following: -

Sr no.	Program Title	Duration	Placement
1	Pediatric Neurosurgery	2 months	Before completion of training
2	Pediatric Orthopaedic	2 months	Before completion of training
3	Pediatric Urology	2 months	Before completion of training
4	Pediatric Plastic Surgery	2 months	Before completion of training

If in any institution these specialties do not exist then the candidate can perform duties in parent ward and the supervisor will certify that these procedures are performed in the department.

Section E:

Assessment Plan:

Program duration	Course contents	Assessment method
At the end of 2nd year of program	1. Revision of core MBBS component including basic and clinical components. 2. Basic knowledge and Acquiring skill related to the specialty according to the objectives made. 1. First 2 mandatory Workshops and basic surgical skills as described in course outline. 3. Submission of synopsis.	**Intermediate Examination:** to be taken by university. It will include: a) Written=300 b) TOACS/OSCE/ LONG CASE/ SHORT CASE=300 **Total Marks =600**
At the end of 5 year	1. Training to act as an individual while managing patient or performing any task as defined by the objectives. 2. Training to act as a teacher, researcher, leader and a player in a team. 3. Overall development of a health care professional with all the set competencies of the Program. 4. All the mandatory and specialty oriented workshops to be completed as mentioned in the curriculum 5. Rotations as described in the curriculum completed	**Final Examination** to be conducted by university. It will include: a) Written=300 b) TOACS/OSCE/LONG CASE/SHORT CASE=300 c)Continuous internal assessment=100 Thesis evaluation =300 **Total marks=600+100+300=**

	6. Thesis completion and submission	**1000**

Components of Mid-term Examination

- Written: Total Marks= 300
- Clinical: TOACS/OSCE= 300

Total = 600

Components of Final Examination:

- Written: 300 Marks
- Clinical: TOACS/OSCE= 300 Marks
- Continuous internal assessment =100
- Thesis Evaluation= 300 Marks

Total = 1000 Marks

Intermediate Examinations:

Intermediate examination would be conducted for the candidate getting training, at the end of 2nd calendar year of the program.

Eligibility Criteria:

1. Candidate remained on institution roll during the period approved for appearing in examination.
2. Certificate of completion of mandatory workshops and basic surgical skills.
3. Completion of Log book signed by supervisor/concerned Head of Department.
4. Certificate of submission of Ethical Review Committee approved synopsis to the university if required as per rules of synopsis submission.
5. Evidence of payment of examination fee as prescribed by the University from time to time.

6. Certificates submitted through Principal/Dean/Head of academic institution shall be accepted as valid towards the candidature of an applicant.
7. Submission of application for the examination and the conduct of examination.

Intermediate Examination Schedule and Fee:

a) Intermediate Examination at completion of two years training, will be held twice a year.

b) There will be a minimum period of 30 days between submission of application for the examination and the conduction of examination.

c) Examination fee will be determined periodically by the University.

d) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.

e) The Controller of Examinations will issue Roll Number Slips on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee.

Written Examination:

The written examination will consist of 100 single best answer type Multiple Choice Questions. Each correct answer in the multiple-choice question paper will carry 02 marks. The short essay question will be clinical scenario or practice based, and each question will carry 10 marks.

The marks of written exam will be divided as follows:

- MCQs (single best type) = 200 Marks
- SEQ (10 marks) =100

Declaration of Results

The candidates scoring 60% marks in the written examination will be considered pass and will then be eligible to appear in the clinical and oral examination.

Clinical, TOACS/OSCE:

The clinical and TOACS/OSCE & Oral examination will evaluate patient care competencies in detail,

The examination will be of 300 total marks consisting of the following components

Clinical, TOACS/OSCE = Total Marks 300

a) 2 short Cases (50 each) = 100 marks

b) 1 Long Case = 100 marks

c) TOACS/OSCE & ORAL =100 marks (10 stations with 10 marks each)

- Each short case will be of 10 minutes duration, 05 minutes will be for examining the patient and 05 minutes for discussion.
- The long case and oral examination will each be of 30 minutes duration.

Declaration of Results

- A student scoring 60% in long case, 60% in short cases ad 60% in TOACS/OSCE will be considered pass in the examination.
- A maximum total of four consecutive attempts (availed or un-availed) will be allowed in the Intermediate Examination during which the candidate will be allowed to continue his training program. If the candidate fails to pass his Intermediate Examination within the above-mentioned limit of four attempts**,** candidate shall have to take entire intermediate examination including written examination again.

Final Examination

(At the end of 5th Calendar year of the program)

Eligibility Criteria:

To appear in the Final Examination the candidate shall be required:

1. Result card showing that the candidate has passed intermediate Examination.
2. Certificate of completion of 5 Years training duly signed by Supervisor, Head of parent Department and that of the Head of Department where rotations were done (if prescribed in the curriculum).
3. Evidence of thesis submission to Department of Examination of the University.
4. Evidence of payment of examination fee as prescribed by the university from time to time.
5. The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.
6. Candidate remained on institution roll during the period required for appearing in examination.
7. Only those certificates, submitted through Principal/Dean/Head of academic institution shall be accepted.

Final Examination Schedule and Fee:

a) Final examination will be held twice a year i.e. at least six months apart.
b) Examination fee will be determined and varied at periodic intervals by the University.
c) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.
d) The Controller of Examinations will issue an Admittance Card with a photograph of the candidate on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee. This card will also show the Roll Number, date / time and venue of examination.

Written Part of Final Examination

a) The written examination will consist of 100 single best answer type Multiple Choice Questions (MCQs) and 10 Short Essay Questions (SEQs). Each correct answer in the Multiple-Choice Question paper will carry 02 marks. Each Short Essay Question will carry 10 marks.

b) The Total Marks of the Written Examination will be 300 and to be divided as follows:

- Multiple Choice Question paper Total Marks = 200
- Short Essay Question paper Total Marks = 100

Total=300

Paper 1

- MCQs 100 (2marks each)

Paper 2

- SEQs 10 (10 marks each)

a. Paper 1 shall comprise of hundred (100) "single best answer" type Multiple Choice Questions. Each Question shall carry 02 marks.

b. Paper 2 shall comprise of ten (10) Short Essay Questions, each carrying 10 marks.

Declaration of Results

c. The candidates scoring 60% marks in aggregate of Paper 1 and Paper 2 of the written examination will be declared pass and will become eligible to appear in the Clinical Examination.

Clinical, TOACS/OSCE:

a) The Clinical Examination will consist of 04 short cases, 01 long case and TOACs/OSCE with 01 station for a pair of Internal and External Examiner. Each short case will be of 10 minutes duration, 05 minutes will be for examining the patient and 05 minutes for discussion.

b) The Total Marks of Clinical and TOACs/OSCE & Oral will be 300 and to be divided as follows:

- Short Cases (4) Total Marks = 100
- Long Case (1) Total Marks = 100
- TOACS/OSCE & ORAL Total Marks = 100

Total= 300

Declaration of Results

- A student scoring 60% in long case, 60% in short cases ad 60% in TOACS/OSCE will be considered pass in the examination.

- Candidate, who passes written examination, shall be allowed a maximum of three attempts within 2 years to pass Clinical/Oral examination. However, in case of failure to pass Clinical examination within stipulated attempts the credit of passing the written examination shall stand withdrawn and candidate shall have to take entire examination including written examination, afresh.

- Candidate who has completed his/her training along with all the requirements mentioned in the curriculum, shall have to appear in the written of final examination at least once within a period of 8 years (from the time of induction in the training). Failure to comply with this, the matter will be referred to the competent authority through proper channel for final decision.

Synopsis and Thesis Writing:

Thesis writing must be completed and thesis be submitted at least 6 months before the end of final year of the program.

Thesis evaluation & defense will be carried out at the end of 5th calendar year of MS.

Submission / Evaluation of Synopsis

a) The candidates shall prepare their synopsis as per guidelines provided by the Advanced Studies & Research Board, available on the university website.

b) The research topic in clinical subject should have 30% component related to basic sciences and 70% component related to applied clinical sciences. The research topic must

consist of a reasonable sample size and sufficient numbers of variables to give training to the candidate to conduct research, to collect & analyze the data.

c) Synopsis of research project shall be got approved by the end of the 2nd year of MS program. The synopsis after review by an Institutional Review Committee, shall be submitted to the University for Consideration by the Advanced Studies & Research Board, through the Principal / Dean /Head of the institution.

Submission and evaluation of Thesis Evaluation (300 Marks)

1. The Thesis shall be submitted to the Controller of Examination through Head of Institute, duly signed by the Supervisor, Co-Supervisor(s) and Head of the Department.
2. Submission of Thesis is a prerequisite for taking Final Theory Examination.
3. Examiners shall be appointed by the Vice chancellor on recommendation of Controller of Examination from a panel approved by Advance Studies & Research Board for evaluation of thesis.
4. All MS thesis shall be evaluated by 2 examiners, 1 internal and 1 External examiner (The supervisor must not be the evaluator).
5. Thesis defense shall be held after approval of evaluation reports by Advanced Studies & Research Board.
6. Thesis defense shall be conducted by the external examiners who evaluated Thesis of the candidate.
7. The candidate scoring 60% marks in Thesis defense examination will be declared as pass in the examination.

Continuous Internal assessment

It will consist of professional growth oriented student-centered integrated assessment with an additional component of formative assessment and measurement-based summative assessment.

Attendance

- Students joining postgraduate training program shall work as full-time residents during the duration of training maximum 2 leaves are allowed in one month, and should take full responsibility and participation in all facets of

the educational process. The period of training for obtaining degrees shall be four completed years

Presentations

- In addition to the conventional teaching methodologies interactive strategies will also be introduced to improve both clinical and communication skills in the upcoming consultants. Presentations must be conducted regularly as scheduled and attended by all available faculty and residents. As a policy, active participation of the postgraduate resident will be encouraged. Proper written feedback will be given for these presentations and that will be a part of Resident's Portfolio as well. Reflection of the events to be written by the residents as well and must be included in their portfolios.

Task evaluation

- This competency will be learned from journal clubs, review of literature, policies and guidelines, audit projects, medical error investigations, root cause analysis and awareness of healthcare facilities. Active participation and ability to fulfill given tasks will be encouraged. Written feedback must be given and documented to be included in portfolio

Continuous Internal Assessment format (100 Marks)

1. The award of continuous internal assessment shall be submitted confidentially in a sealed envelope.
2. The supervisor shall submit cumulative score of internal assessment of all training years to be added together to provide a final cumulative score of Continuous Internal Assessments of all the trainees to the Head of the Department/ Dean of Post Graduate studies.
3. The Head of Department/ Dean shall submit the continuous internal assessment score through the Principal/ Registrar office to the Examination Department of the University. Score of continuous internal assessment once submitted shall be final and cannot be changed subsequently under any circumstances.
4. The weightage of internal assessment in the final examination will be 10%.
5. Continuous Internal Workplace Based Assessments will be done by the supervisors, that may be based on but not limited to:

a. Generic and Specialty Specific Competency Assessments
b. Multisource Feedback Evaluations
c. Assessment of Candidates' Training Portfolio

TOOLS OF ASSESSMENT FOR THE COURSE:

TOOL USED:	DOMAIN TESTED:
MCQs	Knowledge
SEQs	Knowledge
TOACS/OSCE	Knowledge. Skill Attitude
PRESENTATIONS (wards, seminars, conferences, journal clubs)	Knowledge. Skill Attitude
Portfolios and log books.	Skill Attitude
Short cases.	Knowledge

	Skill Attitude
Long cases	Knowledge Skill Attitude
Continuous internal assessment	Skill Attitude
Feedback from department where rotation is being conducted.	Knowledge Skill Attitude

Section F

Award of MS Paediatric Surgery Degree

A candidate having declared successful in all the components of examination i.e. Theory, Clinical and Thesis shall be declared pass and shall be conferred degree in MS Paediatric Surgery

Section G:

Log Book

As per format approved by the university, Available on university website

Section H:

Portfolio

As per format approved by the university, Available on university website

Section I

Paper Scheme

Written Paper Intermediate Examination:

Sr No.	Topic:	Number Of MCQs	Number Of SEQ
1.	Principles of general surgery	70	7
2	Principles of Paediatric surgery	30	3

Written Paper Final Examination:

PAPER 1 (Special Pediatric Surgery)		100 MCQs	
General Paediatric Surgery	Antenatal diagnosis	1	60

	Antenatal management	1	
	Antenatal counseling	1	
	Peri and Postnatal Congenital anomalies	1	
	Abdomen	27	
	Genitourinary disorders	15	
	Joint and Limb anomalies	4	
	Thorax	10	
Traumatology/Orthopaedic disorders			14
Major Tumors of childhood			6
Central and peripheral Nervous system	Brain anomalies	1	3
	Spinal cord anomalies	1	
	Vertebral anomalies	1	
Head and Neck Surgery	Head (scalp, Skull and Brain)	3	12
	Face	3	

	Oral cavity	3	
	Neck	3	
Special Areas			5

	PAPER 2 (Special Pediatric Surgery)	**10 SEQ's**
Sr No.	**Topic:**	**Number Of SEQ**
1	GIT	3
2	Thoracic Surgery	1
3	Genitourinary Surgery	1
4	Pediatric Trauma/ orthopedic disorders	1
5	Organ Transplantation and miscellaneous	1
6	Pediatric Tumor surgery	1
7	Head & Neck	1
8	General Paediatric surgery	1

Section J

Resources and references (books and other resource material)

A. BASIC BOOKS

- Gray's Anatomy. 42st Ed. 2020. Standring S.
- Textbook of Medical Physiology 13th Ed. 2015 Guyton
- Harper's Biochemistry 30th Ed 2016.
- Katzung's Basic and Clinical Pharmacology 13th Ed 2015
- Pathologic Basis of Disease. Robbins & Cotran. 9th Ed 2015
- Medical Embryology Langman's 13th Ed. 2015

B. TEXT BOOK OF PEDIATRIC SURGERY

- Pediatric Surgery 7th Edition. Grosfeld, O'Neill, Coran, Fonkalsrud. 2006
- Pediatric Surgery 7th Edition. Ashcraft K
- Operative Surgery- Paediatric Surgery. Rob & Smith 5th Ed.
- Newborn Surgery 4th Edition. P Puri. 2017
- Pediatric Surgery. Puri P, Höllwarth. 2006
- Principles and Practice of Pediatric Surgery. Oldham KT 2006.
- Paediatric Surgery 2nd Ed. Burge DM 2006.

Section K

List of authors and contributors

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Assistant Professor Paediatric Surgery

Signed by head of Department