بسم الله الرحمن الرحيم

CURRICULUM / STATUTES / REGULATIONS

FOR 4 YEARS MS GENERAL SURGERY

Faisalabad Medical University

Faisalabad

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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 program shall be MS General Surgery.

Course Title:

MS

Training Centers

Department of General Surgery in affiliated hospitals of Faisalabad Medical University, Faisalabad.

Duration of Course

The duration of course shall be four (4) 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 program which is conducted by the department which will carry weightage in final assessment.
2. **Clinical Training** in General Surgery
3. **Research and Thesis writing.**

4. **Mandatory Workshops** throughout the course of program will be conducted. The basic workshops will be attended by all trainees from General Surgery 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 program 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.

6. Specialty Specific workshops

Departments will conduct following workshop.

1. Basic surgical skills

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 General Surgery.

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 leaves, Ex Pakistan Leaves and Extra Ordinary Leave etc. would be allocated through the office of Dean Post Graduate to the competent authority.

Section C:

AIMS AND OBJECTIVES OF THE COURSE

AIM

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

LEARNING OBJECTIVES:

MS General Surgery training should enable a student to

- Access and apply relevant knowledge to clinical practice
- Maintain currency of knowledge
- Apply scientific knowledge in practice, appropriate to patient need and context
- Critically evaluate new technology
- Safely and effectively performs appropriate surgical procedures
- Consistently demonstrate sound surgical skills
- Demonstrate procedural knowledge and technical skill at a level appropriate to the level of training
- Demonstrate manual dexterity required to carry out procedures
- Adapt their skills in the context of each patient and procedure
- Maintain and acquire new skills
- Approach and carry out procedures with due attention to safety of patient, self and others
- Critically analyze their own clinical performance for continuous improvement
- Design and implement effective management plans:
- Recognize the clinical features, accurately diagnose and manage surgical problems
- Formulate a well-reasoned provisional diagnosis and management plan
- based on a thorough history and examination

- Formulate a differential diagnosis based on investigative findings to manage patients in ways that demonstrate sensitivity to their physical, social, cultural and psychological needs
- Recognize disorders of the organ systems and differentiate those amenable to surgical treatment
- Effectively manage the care of patients with trauma including multiple system trauma
- Effectively recognize and manage complications
- Accurately identify the benefits, risks and mechanisms of action of current and evolving treatment modalities
- Indicate alternatives in the process of interpreting investigations and in decision-making
- Manage complexity and uncertainty
- Consider all issues relevant to the patient
- Identify risk
- Assess and implement a risk management plan
- Select medically appropriate investigative tools and monitoring techniques in a cost-effective and useful manner
- Appraise and interpret appropriate diagnostic imaging and investigations according to patients' needs
- Critically evaluates the advantages and disadvantages of different investigative modalities
- Communicate effectively
- Communicate appropriate information to patients (and their family) about procedures, potentialities and risks associated with surgery in ways that encourage their participation in informed decision making
- Communicate with the patient (and their family) the treatment options including both benefits and risks.
- Communicate with and co-ordinate health management teams to achieve an optimal surgical environment
- Initiate the resolution of misunderstandings or disputes
- Modify communication to accommodate cultural and linguistic sensitivities of the patient
- Recognize the value of knowledge and research and its application to clinical practice
- Assume responsibility for self-directed learning
- Critically appraise new trends in General Surgery
- Facilitate the learning of others.

Appreciate ethical issues associated with General Surgery:

- Consistently apply ethical principles
- Identify ethical expectations that impact on medico-legal issues
- Recognize the current legal aspects of informed consent and confidentiality
- Be accountable for the management of their patients.

Professionalism by:

- Employing a critically reflective approach to General Surgery
- Adhering with current regulations concerning workplace harassment
- Regularly carrying out self and peer reviewed audit
- Acknowledging and have insight into their own limitations
- Acknowledging and learning from mistakes
- Work in collaboration with members of an interdisciplinary team where appropriate
- Collaborate with other professionals in the selection and use of various types of treatments assessing and weighing the indications and contraindications associated with each type
- Develop a care plan for a patient in collaboration with members of an interdisciplinary team
- Employ a consultative approach with colleagues and other professionals
- Recognize the need to refer patients to other professionals.
- Management and Leadership
- Effective use of resources to balance patient care and system resources
- Identify and differentiate between system resources and patient needs
- Prioritize needs and demands dealing with limited system resources.
- Manage and lead clinical teams
- Recognize the importance of different types of expertise which contribute to the effective functioning of clinical team.
- Maintain clinically relevant and accurate contemporaneous records

Health advocacy:

- Promote health maintenance of patients
- Advocate for appropriate health resource allocation
- Promote health maintenance of colleagues and teacher

Specific Learning Outcomes

On completion of the training program, General surgery trainees pursuing an academic pathway will be expected to have demonstrated competence in all aspects of the published syllabus. The specific training component would be targeted for establishing clearly defined standards of knowledge and skills required to practice General surgery at secondary and tertiary care level with proficiency in the basic and applied clinical sciences, intensive care and emergency (A&E) medicine related to General surgery and complementary surgical disciplines.

Content List

BASIC PRINCIPLES

- Metabolic response to injury
- Shock and blood transfusion
- Wounds, healing and tissue repair
- Tissue engineering and regeneration
- Surgical infection
- Tropical infections and infestations

- Basic surgical skills and anastomoses
- Principles of laparoscopic and robotic surgery
- Principles of paediatric surgery
- Principles of oncology
- Surgical audit and research
- Surgical ethics and law
- Human factors, patient safety and quality improvement

INVESTIGATION AND DIAGNOSIS

- Diagnostic imaging
- Gastrointestinal endoscopy
- Tissue and molecular diagnosis

PERIOPERATIVE CARE

- Preoperative care including the high-risk surgical patient
- Anaesthesia and pain relief
- Nutrition and fluid therapy
- Postoperative care
- Day case surgery

TRAUMA

- Introduction to trauma
- Early assessment and management of severe
- trauma
- Traumatic brain injury
- Neck and spine
- Maxillofacial trauma
- Torso trauma
- Extremity trauma
- Disaster surgery
- Conflict surgery

ELECTIVE ORTHOPAEDICS

- History taking and clinical examination in musculoskeletal disease
- Sports medicine and sports injuries
- The spine
- Upper limb
- Hip and knee
- Foot and ankle
- Musculoskeletal tumours
- Infection of the bones and joints
- Paediatric orthopaedics

SKIN AND SUBCUTANEOUS TISSUE

- Skin and subcutaneous tissue
- Burns
- Plastic and reconstructive surgery

HEAD AND NECK

- Cranial neurosurgery
- The eye and orbit
- Cleft lip and palate: developmental abnormalities of the face, mouth and jaws
- The ear, nose and sinuses

- Pharynx, larynx and neck
- Oral cavity malignancy
- Disorders of the salivary glands

BREAST AND ENDOCRINE

- The thyroid gland
- The parathyroid glands
- The adrenal glands and other abdominal endocrine disorders
- The breast

CARDIOTHORACIC

- Cardiac surgery
- The thorax

VASCULAR

- Arterial disorders
- Venous disorders
- Lymphatic disorders

ABDOMINAL

- History and examination of the abdomen
- Abdominal wall, hernia and umbilicus
- The peritoneum, omentum, mesentery and retroperitoneal space
- The oesophagus
- Stomach and duodenum
- Bariatric and metabolic surgery
- The liver
- The spleen
- The gallbladder and bile ducts
- The pancreas
- The small intestine
- The large intestine
- Intestinal obstruction
- The vermiform appendix
- The rectum
- The anus and anal canal

GENITOURINARY

- Urinary symptoms and investigations
- Kidneys and ureters
- The urinary bladder
- The prostate and seminal vesicles
- Urethra and penis
- Testis and scrotum
- Gynaecology

TRANSPLANTATION

- Transplantation

APPENDICES

- Appendix
- Common instruments used in general surgery
- Appendix
- Fundamental principles in the operating theatre

- and the importance of global health
- Index

Surgical Skills & Procedures

CORE COMPETENCIES

The clinical skills, which a general surgery trainee must have, are varied and complex. A complete list of procedures necessary for trainees along with the years and the level of competence to be achieved is given below:

1. Observer Status
2. Assistant Status
3. Performed Under Supervision
4. Performed Under Indirect Supervision
5. Performed Independently

Note: Levels 4 and 5 for practical purposes are almost synonymous

COMPETENCIES	FIRST YEAR
	Level
PATIENT MANAGEMENT	
Elicit a pertinent history	5
Communicate effectively with	5
Perform a physical examination	5
Order appropriate investigations	4
Interpret the results of investigations	4
Assess fitness to undergo surgery	4
Decide and implement appropriate Treatment	4
Postoperative management and Monitoring	4
Maintain accurate and appropriate Records	5
Preoperative Preparation for Various Surgical Procedures	
Use of aseptic techniques	4
Positioning of patient for diagnostics & operative procedures (variety)	3
Identification and appropriate use of common surgical instruments, suture materials and appliances	3
General Surgery Procedures	
Controlling hemorrhage	4
Debridement, wound excision, closure/suture of wound (excluding repair of special tissues like nerves and tendons)	3
Uretheral catheterization	3
Suprapubic puncture	3
Meatotomy	4
Circumcision	3
Nasogastric intubation	3

Venesection	3
Tube throacostomy	3
Management of empyema	3
Biopsy of lymph nodes	3
Biopsy of skin lesions, subcutaneous Lumps or swellings	3
Excision of soft tissue benign tumors And cysts (surface surgery)	3
Cricothyroidotomy	2
Opening and closing of abdomen	3
Proctoscopy and interpretation of Findings	3
Proctosigmoidoscopy	3
Fine needle aspiration (FNAC)	3
Removal of skin stitches/staplers	3
Removal of drains/ng tube/foley`s	3
Tru cut biopsy od body surface lesions	2
ABDOMINAL OPERATIONS	
Inguinal hernia repair	1
Rectal polyp	2
Suprapubic cystostomy	1
Vesicolithotomy	3
Hemorrhoids, fissures, fistulae in ano	1
Exploratory laparotomy	3
Appendicectomy	1
Cholecystectomy	1
Oncological surgery	1
Laparoscopic / endoscopic surgery (principles and instrument handling)	3
Breast operations and benign lesions	1
Stoma formation and reversal	1
Ventral hernia repair	1
Use of ventilators	1
PREOPERATIVE CARE	
Wound healing and peri-operative Complication	2
CPR	2
CV lines	1
Fluid and electrolyte balance	3
Monitoring devices	3
Inotropic agents	3
Care of unconscious patient	1
Replacement of nutrition	1
Stoma care	1

ANESTHESIA	
Airway maintenance and passing of endotracheal tube	2
IPPR and other methods of ventilation	1
Local anesthesia	2
Regional anesthesia	1
Lumber puncture and spinal anesthesia	1
Principles of general anesthesia	1

COMPETENCIES	SECOND YEAR
	Level
PATIENT MANAGEMENT	
Elicit a pertinent history	5
Communicate effectively with	5
Perform a physical examination	5
Order appropriate investigations	4
Interpret the results of investigations	4
Assess fitness to undergo surgery	4
Decide and implement appropriate treatment	4
Postoperative management & Monitoring	4
Maintain accurate and appropriate Records	4
Preoperative Preparation for Various Surgical Procedures	
Use of aseptic techniques	4
Positioning of patient for diagnostics & operative procedures (variety)	4
Identification and appropriate use ofcommon surgical instruments, suturematerials and appliances	4
General Surgery Procedures	
Controlling hemorrhage	4
Debridement, wound excision, closure/suture of wound (excludingrepair of special tissues like nerves and tendons)	5
Uretheral catheterization	5
Suprapubic puncture	5
Meatotomy	5
Circumcision	5
Nasogastric intubation	5
Venesection	5
Tube throacostomy	5
Management of empyema	4
Biopsy of lymph nodes	4
Biopsy of skin lesions, subcutaneous Lumps or swellings	4
Excision of soft tissue benign tumors And cysts (surface surgery)	5

Cricothyroidotomy	5
Opening and closing of abdomen	4
Proctoscopy and interpretation of Findings	4
Proctosigmoidoscopy	4
Fine needle aspiration (FNAC)	4
Removal of skin stitches/staplers	5
Removal of drains/ng tube/foley`s	5
Tru cut biopsy od body surface lesions	4
ABDOMINAL OPERATIONS	
Inguinal hernia repair	4
Rectal polyp	2
Suprapubic cystostomy	2
Vesicolithotomy	2
Hemorrhoids, fissures, fistulae in ano	2
Exploratory laparotomy	2
Appendicectomy	3
Cholecystectomy	2
Oncological surgery	2
Laparoscopic / endoscopic surgery (principles and instrument handling)	2
Breast operations and benign lesions	2
Stoma formation and reversal	1
Ventral hernia repair	2
PREOPERATIVE CARE	
Wound healing and peri-operative Complication	3
CPR	5
CV lines	5
Fluid and electrolyte balance	4
Monitoring devices	5
Inotropic agents	4
Care of unconscious patient	4
Replacement of nutrition	5
Stoma care	4
ANESTHESIA	
Airway maintenance and passing of endotracheal tube	3
IPPR and other methods of ventilation	3
Local anesthesia	3
Regional anesthesia	2
Lumber puncture and spinal anesthesia	3
Principles of general anesthesia	2

COMPETENCIES	THIRD YEAR Level
PATIENT MANAGEMENT • Elicit pertinent history • Perform physical examination • Order appropriate investigations • Interpret results of investigations • Assess for fitness to undergo surgery • Decide & implementing appropriate treatment • Communicate effectively with patients, families and the health team • Maintain accurate and appropriate records	5
Postoperative management and monitoring	5
PREPARATION FOR SURGERY	**5**
Taking informed consent	
Preoperative preparation and optimization for Various surgical procedures	5
Observance Of aseptic techniques	5
Positioning of patient on operation table For: perianal surgery, thoracotomy, laparotomy, renal surgery, head & neck surgery Surgical procedure on the back	4
Use Of common surgical instruments & Appliances (including Endoscopic instruments)	5
USE of suture materials in different surgical Procedures/stappling devices and techniques	5
GENERAL SURGICAL PROCEDURES & MANAGEMENT	
Debridement, wound excision, closure/suture of wound (excluding repair of special tissues like nerves and tendons)	4
Incision and drainage of abscesses (excluding deep seated abscesses in peritoneum and other Serous cavities)	4
Lumbar puncture	5
Nasogastric intubation	5
FNAC & Tru cut biopsy	4
Biopsy of lymph nodes	4
Biopsy of skin lesions, subcutaneous lumps or Swellings	5
Excision of soft tissue tumours and cysts	4
Split skin graft	3
Proctoscopy and interpretation of findings	4
Gastroscopy	3
Colonoscopy	3
Proctosigmoidoscopy	4
Liver biopsy	3
Percutaneous needle aspiration under	4

Ultrasound guidance CT scan	
Surgery for ingrowing toe nail	4
ABDOMINAL OPERATIONS	
Opening & Closing Abdomen	4
Inguinal hernia repair	4
Ventral & incisional hernia repair	5
Haemorrhoids	4
Fissure in ano	4
Fistulae	4
Appendicectomy (open)	5
Cholecystectomy (open)	4
Oesophagectomy	2
Intestinal resection and anastomosis	5
Stoma formation & reversal	4
Laparoscopic surgery	2
Laparoscopic cholecystectomy	3
Laparoscopic hernia repair	2
Use of stappling guns	2
Heller Cardiomyotomy	0
Hiatal hernia repair	2
Gastrectomy (total & distal)	2
Gastrojejunostomy	3
Surgery for perforated duodenal ulcer	4
Surgery for bleeding ulcer	3
CBD exploration & repair	3
Choledochoduodenostomy and Hepaticojejunostomy	3
Choledochal cyst excision and reconstruction	2
Open and laparoscopic surgery for hydatid cyst Liver	3
Elective open and laparoscopic spleenectomy	3
Spleenectomy in trauma	3
Pancreaticoduodenectomy (Whipple)	2
Tripple bypass for advanced carcinoma pancrease	3
Distal pancreatectomy	3
Pancreaticojejunostomy for chronic pancreatitis	-
Right, left & total colectomy	3
Sigmoid colectomy	3
Low anterior resection	3
APR	3
Surgery for inflammatory bowel disease	3
Laparoscopic appendicectomy	3
Pilonoidal sinus surgery	3
Stappled haemorhoidectomy	3

Laparotomy for peritonitis (enteric perforation etc)	3
Diagnostic laparoscopy and biopsy	3
THORACIC SURGERY	
Chest intubation (tube throacostomy)	5
Emergency thoracotom	2
Diagnosis and management of life threatening Chest trauma (tension pneumothorax, open Pneumothorax, massive haemothorax, flail chest)	3
Management of empyema thorax	2
VASCULAR SURGERY	
Surgery for varicose veins	3
Embolectomy	2
Vascular repair	2
Principles of thromboprophylaxis	3
Management of DVT	3
SURGERY OF HEAD, NECK AND OTHER AREAS	
BREAST OPERATIONS	4
THYRIOD, PARATHYROID	4
SALIVARY GLANDS AND JAWS	2
PAROTID SURGERY	2
ANAESTHESIA & CRITICAL CARE	
Airway maintenance and passing ofendotracheal tube	2
Local & regional anaesthesia	5
Spinal & epidural anaesthesia	3
Principles of ga/anaesthetic machines	5
Management of pain	5
Anaesthetic agents and muscle relaxant	5
IPPR and other methods of artificial respiration	3
CPR	5
Fluid and electrolyte balance	4
Monitoring devices	3
Inotropic agents	3
Replacement of nutrition	3
Placement of CVP line	4
UROLOGY	
Uretheral catheterization using soft and hardcatheters	5
Suprapubic puncture	4
Circumcision	4
Orchidopexy	3
Varicocelectomy	1
Hydrocelectomy	3
Orchidectomy	3
Renal stones surgery	2

ORTHOPAEDIC SURGERY	
Application of splints, pop casts, skin traction	3
Tendon repairs	3
Amputations	3
Diagnosis and management of compartment Syndrome	3
NEUROSURGERY	
Management of head injury	2
Care OF unconscious patient	3
PAEDIATRIC SURGERY	
Rectal polypectomy	3
Inguinal herniatomy	2
Orchedopexy	2
Circumcision in infants	3
Fluid and electrolyte requirement	3
TRAUMA MANAGEMENT	
Burn management	4
Controlling hemorrhage	4
Fast	2
Trauma management ATLS/ACLS	4
Application of cervical collar	4
Log roll of patient	4
Tracheostomy / cricothyroidotomy	3
Damage control laparotomy	2
Laparotomy for penetrating injuries	2
Conservative management of blunt abdominal Trauma	3

COMPETENCIES	FOURTH YEAR
	Level
PATIENT MANAGEMENT • Elicit pertinent history • Perform physical examination • Order appropriate investigations • Interpret results of investigations • Assess for fitness to undergo surgery • Decide & implementing appropriate treatment • Communicate effectively with patients, families and the health team • Maintain accurate and appropriate records	5
Postoperative management and monitoring	5
PREPARATION FOR SURGERY	**5**
Taking informed consent	

Preoperative preparation and optimization for Various surgical procedures	5
Observance Of aseptic techniques	5
Positioning of patient on operation table For: perianal surgery, thoracotomy, laparotomy, renal surgery, head & neck surgery Surgical procedure on the back	4
Use Of common surgical instruments & Appliances (including Endoscopic instruments)	5
USE of suture materials in different surgical Procedures/stappling devices and techniques	5
GENERAL SURGICAL PROCEDURES & MANAGEMENT	
Debridement, wound excision, closure/suture ofwound (excluding repair of special tissues like nerves and tendons)	5
Incision and drainage of abscesses (excluding deep seated abscesses in peritoneum and other Serous cavities)	5
Lumbar puncture	5
Nasogastric intubation	5
FNAC & tru cut biopsy	5
Biopsy of lymph nodes	5
Biopsy of skin lesions, subcutaneous lumps or Swellings	5
Excision of soft tissue tumours and cysts	5
Split skin graft	4
Proctoscopy and interpretation of findings	5
Gastroscopy	2
Colonoscopy	2
Proctosigmoidoscopy	5
Liver biopsy	2
Percutaneous needle aspiration under Ultrasound guidance / CT scan	1
Surgery for ingrowing toe nail	5
ABDOMINAL OPERATIONS	
OPENING AND CLOSING ABDOMEN	5
Inguinal hernia repair	5
Ventral & incisional hernia repair	3
Haemorrhoids	4
Fissure in ano	4
Fistulae	4
Appendicectomy (open)	5
Cholecystectomy (open)	4
Oesophagectomy	2
Intestinal resection and anastomosis	4
Stoma formation & reversal	4
Laparoscopic surgery	2

Laparoscopic cholecystectomy	4
Laparoscopic hernia repair	2
Use of stappling guns	2
Heller cardiomyotomy	1
Hiatal hernia repair	2
Gastrectomy (total & distal)	2
Gastrojejunostomy	3
Surgery for perforated duodenal ulcer	5
Surgery for bleeding ulcer	2
CBD exploration & repair	3
Choledochoduodenostomy andhepaticojejunostomy	4
Choledochal cyst excision and reconstruction	3
Open and laparoscopic surgery for hydatid cyst Liver	4
Elective open and laparoscopic spleenectomy	4
Spleenectomy in trauma	4
Pancreaticoduodenectomy (whipple)	2
Tripple bypass for advanced carcinoma pancrease	3
Distal pancreatectomy	3
Pancreaticojejunostomy for chronic pancreatitis	3
Right, left & total colectomy	4
Sigmoid colectomy	4
Low anterior resection	4
APR	4
Surgery for inflammatory bowel disease	3
Laparoscopic appendicectomy	4
Pilonoidal sinus surgery	5
Stappled haemorhoidectomy	4
Laparotomy for peritonitis (enteric perforation etc)	4
Diagnostic laparoscopy and biopsy	4
THORACIC SURGERY	
Chest intubation (tube throacostomy)	5
Emergency thoracotomy	4
Diagnosis and management of life threatening Chest trauma (tension pneumothorax, open pneumothorax, massive haemothorax, flail chest) Management of empyema	5 3
VASCULAR SURGERY	
Surgery for varicose veins	4
Embolectomy	4
Vascular repair	4
Principles of thromboprophylaxis	4
Management of DVT	4
SURGERY OF HEAD, NECK AND OTHER AREAS	
BREAST OPERATIONS	5

THYRIOD, PARATHYROID	4
SALIVARY GLANDS AND JAWS	2
PAROTID SURGERY	2
ANAESTHESIA & CRITICAL CARE	
Airway maintenance and passing of endotracheal tube	3
Local & regional anaesthesia	5
Spinal & epidural anaesthesia	3
Principles of ga/anaesthetic machines	5
Management of pain	5
Anaesthetic agents and muscle relaxant	5
IPPR and other methods of artificial respiration	3
CPR	5
Fluid and electrolyte balance	5
Monitoring devices	4
Inotropic agents	3
Replacement of nutrition	3
Placement of CVP line	4
UROLOGY	
Uretheral catheterization using soft and hard catheters	5
Uretheral dilatation	2
Suprapubic puncture	4
Circumcision	4
Orchedopexy	2
Varicocelectomy	2
Hydrocelectomy	4
Orchidectomy	4
Vesicolithotomy	2
Renal stones surgery	2
ORTHOPAEDIC SURGERY	
Application of splints, pop casts, skin traction	4
Tendon repairs	3
Amputations	4
Diagnosis and management of compartment Syndrome	4
NEUROSURGERY	
Management OF head injury	3
Care OF unconscious patient	3
PAEDIATRIC SURGERY	
Rectal polypectomy	4
Inguinal herniatomy	3
Orchedopexy	3
Circumcision in infants	3
Fluid and electrolyte requirement	3

TRAUMA MANAGEMENT	
Burn management	4
Controlling hemorrhage	5
Fast	5
Trauma management ATLS/ACLS	4
Application of cervical collar	4
Log roll of patient	4
Tracheostomy / cricothyroidotomy	4
Damage control laparotomy	3
Laparotomy for penetrating injuries	4
Conservative management of blunt abdominal Trauma	4
Management of blast injuries & mass causality	3

Section D:

PROGRAMME FORMAT

SCHEME OF THE COURSE OF MS GENERAL SURGERY PROGRAM

A summary of four years course in MS General Surgery is presented as under:

Course Structure	Components
Part- I	Basic knowledge of the General Surgery i.e., Anatomy, Physiology and orientation to the subject, basic principles, history taking and case presentation, inpatient and out-patient care. Selection of topic for synopsis and complete his/her synopsis For first 6 months
Part- II	Core knowledge in Surgery: Training in clinical techniques of Surgery with first two mandatory workshops and basic surgical skill workshop and mandatory three rotations. Synopsis is to be submitted at the end of 2nd year

Part- III	**Clinical component of Part III** • Professional Education in General Surgery: Training in General Surgery during 3rd, and 4th year of MS General Surgery program. Three years of training with remaining compulsory workshops
	Research component of Part III • Research and Thesis Writing: Research work/Thesis writing project must be completed and thesis be submitted before the end of training.

Rotations:

General Surgery trainees will do three rotations in Part-II and two mandatory rotations during Part-III training.

Sr. No	Rotation	Duration	Placement
1	Anesthesia (Mandatory)	2 months	In first 2 years
2	Orthopedic Surgery (Mandatory)	2 months	In first 2 years
3	Pediatric surgery	2 months	In first 2 years
4	Neurosurgery	2 months	In first 2 years

5	Urology	2 months	In first 2 years

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. 3. First 2 mandatory Workshops as described in course outline. 4. Three mandatory rotations 5. 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 5th year	1. Training to act as an individual while managing patient or performing any task as defined by the objectives.	**Final Examination** to be conducted by university.

	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 General Surgery oriented workshops to be completed as mentioned in the curriculum 5. Rotations as described in the curriculum completed 6. Thesis completion and submission	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=** **1000**

Components of Intermediate 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 first two mandatory workshops (Communication skills, Research synopsis and thesis writing skills) and basic surgical skills workshop.
3. Certificate of completion of three mandatory rotations
4. Completion of Log book signed by supervisor/concerned Head of Department.
5. Certificate of submission of Ethical Review Committee approved synopsis to the university if required as per rules of synopsis submission.
6. Evidence of payment of examination fee as prescribed by the University from time to time.
7. Certificates submitted through Principal/Dean/Head of academic institution shall be accepted as valid towards the candidature of an applicant.
8. 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 (100x2) (single best type) = 200 Marks
- SEQ (10) (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 TOAC/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 (Total 1 hour).

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, the candidate shall have to take entire intermediate examination including written examination again.

Final Examination

At the end of 4thth 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.
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 (100x2) = 200
- Short Essay Question paper Total Marks (10x10) = 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)(4X25) 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 and 60% in TOACS/OSCE will be considered pass in the examination.
- Candidate, who passes written examination, shall be allowed a maximum of Three availed 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 or 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 period of 8 years (from the time of induction in the training). Failure to compliance 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 submitted 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 two examiners, one internal & one external (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 General 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 General Surgery

Section G:

Log Book

As per format approved by the university (Available at university website)

Section H

Portfolio:

As per format approved by the university

Section I

Paper Scheme

Intermediate Examination for Surgical specialties

Written:
70 % general Surgery and mandatory rotation

30 % from specialty oriented (Urology, Pediatric surgery, Neurosurgery, Plastic Surgery)

Intermediate Examination for General Surgery

100 % general Surgery and mandatory rotation

Sr No.	TOPIC	NUMBER OF MCQs	LEVEL
1.	Metabolic response to injury	4	C2
2.	Shock and blood transfusion	6	C2/C3
3.	Wounds, healing and tissue repair	2	C2
4.	Tissue engineering and regeneration	1	C1
5.	Surgical infection	4	C2/C3
6.	Tropical infections and infestations	2	C2
7.	Basic surgical skills and anastomoses	2	C2/C3
8.	Principles of laparoscopic and robotic surgery	2	C2
9.	Burns	3	C2/C3s
10.	Principles of oncology	3	C1/C2
11.	Surgical audit and research	2	C2
12.	Surgical ethics and law	2	C2
13.	Human factors, patient safety and quality improvement	1	C1
14.	Diagnostic imaging	2	C1/C2
15.	Gastrointestinal endoscopy	1	C1/C2
16.	Tissue and molecular diagnosis	1	C1/C2

17.	Preoperative care including the high-risk surgical patient	6	C2/C3
18.	Anaesthesia and pain relief	4	C2/C3
19.	Nutrition and fluid therapy	4	C2/C3
20.	Postoperative care	6	C2/C3
21.	Day case surgery	2	C2/C3
22.	Introduction to trauma	2	C2/C3
23.	Early assessment and management of severe trauma	6	C2/C3
24.	Traumatic brain injury	3	C2/C3
25.	Neck and spine	3	C2/C3
26.	Maxillofacial trauma	3	C2/C3
27.	Torso trauma	6	C2/C3
28.	Extremity trauma	4	C2/C3
29.	Urological Trauma	3	C2/C3
30.	Disaster surgery	2	C2/C3
31.	Conflict surgery	2	C2/C3
32.	Principles of paediatric surgery	3	C2/C3

SEQ: 10

1	Basic surgical Principals	3	C2/C3
2	Investigations and diagnosis	1	C2/C3
3	Perioperative care	2	C2/C3
4	Trauma	3	C2/C3
5	Basic Principals of Surgical Specialties(Paediatric, Urology, Plastic, Neurosurgery)	1	C2/C3

CLINICAL, TOACS/OSCE Stations Distribution:

For General Surgery

Short case: 4
General Surgery and mandatory rotation: 4
Long case: 1
From General Surgery

For Surgical Specialties

Short case: 4
General Surgery and mandatory rotation: 3
Surgical Speciality (Urology/ Plastic Surgery/ Paeds Surgery/Neurosurgery) 1
Long case: 1
From Surgical Speciality

TOACS/OSCE:

Total Number of station: 10

1. Basic Surgical Principles : 2
2. Diagnostic Imaging : 1
3. Perioperative care: 2
4. Trauma: 3
5. Urology/Paediatric Surgery/Neurosurgery/Plastic Surgery: 2

Written Paper Final Examination

Final Examination

Written:
MCQ: 100
SEQ: 10

Sr No.	TOPIC	NUMBER OF MCQs	LEVEL
1)	History taking and clinical examination in musculoskeletal disease Sports medicine and sports injuries	1	C3
2) 2	The spine, Upper Limb, Hip and Knee, Foot and ankle	1	C3
3)	Musculoskeletal tumours	2	C3
4)	Infection of the bones and joints	2	C3
5)	Paediatric orthopaedics	1	C3
6)	Skin and subcutaneous tissue Plastic and reconstructive surgery	2	C3
7)	Cranial neurosurgery, The eye and orbit	1	C3
8)	Cleft lip and palate: developmental abnormalities of the face, mouth and jaws	1	C3
9)	The ear, nose and sinuses, Pharynx, larynx and neck	1	C3
10)	Oral cavity malignancy Disorders of the salivary glands	2	C3
11)	The thyroid gland	3	C3
12)	The parathyroid glands	3	C3
13)	The adrenal glands and other abdominal endocrine disorders	4	C3
14)	The breast	4	C3
15)	Cardiac surgery	1	C3
16)	The thorax	1	C3
17)	Arterial disorders	2	C3
18)	Venous disorders	2	C3

19)	Lymphatic disorders	1	C3
20)	History and examination of the abdomen	1	C3
21)	Abdominal wall, hernia and umbilicus	4	C3
22)	The peritoneum, omentum, mesentery and retroperitoneal space	3	C3
23)	The oesophagus	3	C3
24)	Stomach and duodenum	3	C3
25)	Bariatric and metabolic surgery	2	C3
26)	The liver	2	C3
27)	The spleen	2	C3
28)	The gallbladder and bile ducts	2	C3
29)	The pancreas	2	C3
30)	The small intestine	2	C3
31)	The large intestine	2	C3
32)	Intestinal obstruction	2	C3
33)	The vermiform appendix	2	C3
34)	The rectum	2	C3
35)	The anus and anal canal	2	C3
36)	Urinary symptoms and investigations Kidneys and ureters	2	C3
37)	The urinary bladder The prostate and seminal vesicles	2	C3
38)	Urethra and penis Testis and scrotum	2	C3
39)	Gynaecology	1	C3
40)	Transplantation	1	C3
41)	Fundamental principles in the operating theatre and the importance of global health	1	C3
42)	Basic Principles of Surgery	7	C3
43)	Diagnostic Imaging	1	C3
44)	Perioperative care	3	C3
45)	Trauma	6	C3
46)	Principled of Paediatric Surgery	3	C3

SEQ:10

1.	Basic surgical Principals	1	C3
2.	Trauma	1	C3
3.	Elective Orthopaedics /Genito Urinary Surgery	1	C3
4.	Head & Neck Surgery/ Plastic and reconstructive Surgery	1	C3
5.	Breast And Endocrine Surgery	2	C3
6.	Cardiothoracic Surgery / Vascular Surgery	1	C3 C3
7.	Abdominal Surgery	3	C3

CLINICAL, TOACS/OSCE Stations Distribution:

Short case: 4
General Surgery
Long case: 1
From General Surgery

TOACS/OSCE:

Total Number of station: 10

1. Basic Surgical Principles 1
2. Trauma 2
3. Elective orthopaedics/ Genito Urinary Surgery 1
4. Head Neck Surgery/ Plastic and reconstructive Surgery 1
5. Breast And Endocrine Surgery 2
6. Cardiothoracic Surgery / Vascular Surgery 1
7. Abdominal Surgery 2

Section J

Resources and references (books and other resource material)

SURGERY:

Clinical:

1. An introduction to the symptoms and signs of surgical disease by Norman Browse
2. Churchill, pocketbook of differential diagnosis By: A. Raftery E. Lim

Theory:

3. Essential of General Surgery, latest edition by Peter Lawrence
4. Essential of Surgical Specialties, latest edition by Peter Lawrence Operative Surgery
5. General Surgery Rob & Smith
6. General Surgery Burge DM

OTHER REFERENCES FOR EXTRA READING:

7. Bailey & Love's Short Practice of Surgery by: H. Bailey & R.J. McNeil
8. Scott: An Aid to Clinical Surgery by: HAF Dudley and BP Waxman
9. Principles of Surgery, by Seymour I. Schwartz, 1999.
10. Essential Surgery 1990 by: H. George Burkit and B. O'Donnel
11. Principle and Practice Surgert by Forrest, Carter, Macleod
12. Morris PJ, Malt RA. Oxford Textbook of Surgery, Oxford University

SURGICAL ATLASES:

1. Operative Surgery, Principles and Techniques by Paul Nora.
2. Atlas of General Surgery, by Carter.
3. Mastery of Surgery by Nyhus and Baker.
4. An Atlas of Surgical Operations by Zollinger and Zollinger.
5. Operative Orthopedics, by Campbell.
6. Vascular Surgery, by Robert Rutherford
7. Johnson's Surgery of the Chest by Waldhausen and Pierce.

Basic Sciences

- General Anatomy By: Professor Tassaduq Hussain
- Embryology: Langman's Embryology
- Gross Anatomy: Clinical Anatomy By: Shell
- Basic Histology By: Jenquiera
- Neuroanatomy By: Snell
- Review of Pharmacology By: Lippincott's Illustrated
- Microbiology By: Jawetz
- Haematology By: Hoffbrand Postgraduate Hematology

- Histopathology By: Robin’s Pathology Basic Disease
- Chemical Pathology By: Bishop’s

Section K

List of authors and contributors