GENERAL SURGERY

Residency Training Program
Leading to the degree of

Master of Surgery (MS General Surgery)

SHAHEED ZULFIQAR ALI BHUTTO MEDICAL UNIVERSITY
ISLAMABAD

DEDICATION

Dedicated to all faculty Members of Curriculum Committee whose persistent efforts in the field of medical education will always be reminisced.

PREFACE

The Shaheed Zulfiqar Ali Bhutto Medical University (SZABMU), a public sector federal University, was established in the premises of postgraduate medical institute, Pakistan Institute of Medical Sciences, Islamabad by an ordinance of national assembly on 21 March, 2013.

Since its inception the university has made an impact in the field of healthcare, undergraduate, postgraduate medical education and research pertaining to grave health problems faced by our country. The Shaheed Zulfiqar Ali Bhutto Medical University is offering 27 post-graduation MD/MS programs. Currently the University is offering 11 Master of Surgery (MS) Programs in field of Surgery and Allied. These are four to six years' programs, classified as a Level III degree by Pakistan Medical Council and fall within Level 7 Category, as per National Qualifications Framework, Higher Education Commission of Pakistan.

In order to meet the standards of the World Federation of Medical Education a paradigm shift has ensued in the field of medical education. The standards provide a template for Institutes carrying out Post Graduate Programs. This led to developing the curriculum as per international standards of Medical Education and in congruence with the cultural, regional and demographic facets of the country.

Department of medical education of SZABMU started functioning in 2014. DME is headed by Dean and has various co- opted members including Dr. Fouzia Sultana and Dr. Zainab Abdullah who worked diligently and integrated the undergraduate curriculum in October 2021. It was also made possible by the conscientious efforts of different curriculum committees who clipped it according to the requirement of Higher Education Commission. The final draft of the curriculum is an attribute to all those who remained involved in the planning, development and evaluation of the curriculum.

Prof. Tanwir Khaliq

Vice Chancellor, SZABMU

ACKNOWLEDGEMENTS

We would like to express our gratitude and appreciation to all those who gave us the opportunity to complete the curriculum.

Department of Medical Education is very grateful to the Worthy Vice Chancellor Prof. Tanwir Khaliq for his vision in initiating the revised curriculum for MS programs in Shaheed Zulfiqar Ali Bhutto Medical. Our special gratitude to the entire curriculum committee for their support and hard work.

Assistant Professor, DME SZABMU

Dr. Fouzia Sultana

Dr. Zainab Abdullah

CURRICULUM

Master of Surgery (MS)

General Surgery

CURRICULUM DEVELOPMENT COMMITTEE

This Curriculum is developed by the following committee:

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TABLE OF CONTENTS

ROAD MAP OF MS General Surgery

(A Brief Summary)

GENERAL INFORMATION AND PROGRAM GOALS:

The Shaheed Zulfiqar Ali Bhutto Medical University is offering 21 post-graduation programs of various levels in different specialties in medicine. The University came into being in 2013 and over a course of time she has produced intelligent health care professionals with unique leadership attributes and professional proficiency. The Master of Surgery (MS) in General Surgery is a course aimed to attract candidates who to yearn to become a competent surgeon. It is a four years' program, classified as a Level III degree by Pakistan Medical Council and falls within Level 7 Category, as per National Qualifications Framework, Higher Education Commission of Pakistan.

The Curriculum focuses on formal teaching, acquisition of knowledge, skill and competence. The student will develop into a skillful researcher so that ultimately a degree holder of MS General Surgery is an evidence based proficient surgeon with modified attitude and practice towards patient management. The students, upon graduation, are expected to demonstrate a high level of expertise in the field of General Surgery.

COURSE DESCRIPTION:

The course provides continuous medical education to the students with dedicated mentorship in clinical training. The students are taught the essentials of Surgery in general in conjunction with allied specialties both with Trauma related and non-trauma related Emergency Surgery. The students undergo academic sessions in lectures and small groups, in emergency, ward, Out Patient department and Operation rooms for minor and major procedures, in pursue of Emergency and Elective Surgical context. Management attributes may be shared by the Intensivists. Patients are evaluated in light of laboratory and imaging modalities and multidisciplinary approach is taught as the basis of patient management.

The Course can be described in the following subsequent points in time:

- MS General Surgery Part I Examination and Admission
- 1st and 2nd years of Clinical Training with prediliction towards:
    - Principals of Surgery in General
    - Basic Surgical Skills
    - Emergency Surgery
    - Preoperative preparation
    - Intraoperative Management
    - Post Operative care and managing eary and late Complications
    - Wound Care
        - The Mandatory Workshops are covered preferentially in early training.
        - The Research Question is put up, the Synopsis devised and applied for approaval in the 1st year to the ERB and AS&RB.
        - Quaternaly Formative Assessment of the Candidate by the supervisor is submitted

- Summative Mid Term Assesment (MTA) by the University
- 3rd year of Clinical Training with Prediliction towards:
    - Specialized Surgery
    - Higher Level of Competency in Surgical Procedures
    -
        - Mandatory Surgical Rotations if not alloted earlier in training
        - Comencement of Research work
- 4th Year of Clinical Training in MS General surgery Concludes with :
    - Leadership Skills and Teamwork and teaching competency
    - Proficiency in planing patient management
    - Eliciting the recommended Surgical Competency
        - Research Writing Orientation and conclusion of Reasearch work with submission of Thesis for Approaval
- Summative Final Examination of MS General Surgery
    - Theory Examination (Papers A and B)
    - OSCE
    - Long Case
    - Short Cases
    - Thesis Defence

Attention to the topics listed will ensure that the trainee has covered, to a substantial degree, those areas of each discipline considered as essential core knowledge. The coverage that each discipline receives below is not indicative of the relative importance placed on each discipline in the training program, or in the Examination.

It is understood that each trainee will not have the opportunity to become proficient in all skills during a four-year training program. However, each trainee should endeavor to at least observe every procedure being performed and, if possible, to participate in it as actively as possible.

1. Principles of Surgery
Homeostasis, hemorrhage, transfusion, shock, infection, trauma in general, endocrine and metabolic responses to injury, fluid, electrolyte and nutritional management, wound healing and care, burns, tissue transplantation, anaesthesia, complications of Surgery, physiological monitoring of patients, pre and post operative care.

2. Surgery of the head, neck and face and neurosurgery
Congenital anomalies, tumours of head and neck, infections, head injury, intracranial lesions, thyroid, parathyroid, lymph nodes and lymphatics, spinal cord, and peripheral nerves, cervical spine, oral cavity, salivary glands, teeth and gums.

3. Orthopaedics and trauma
Diseases of the skeleton including spine, fractures, dislocations, hand and foot conditions, amputations.

4. Genito-urinary system
Investigations, kidney, ureter, bladder, prostate, penis, urethra, scrotum, testes, epididymis, vas deferens, varicocele, congenital anomalies.

5. Thorax

Thoracic inlet, chest wall, breast, pleura, mediastinum, lungs, heart, large vessels, thymus, diaphragm, oesophagus.

6. Abdomen

- Anterior and posterior abdominal wall, omentum, mesentery, peritoneum including peritoneal cavity, hernias, retroperitoneum, pelvis. Gynaecology as related to surgical conditions.
- Liver, gall bladder, bile ducts, pancreas, spleen, stomach, duodenum, jejunum, small intestine, appendix, colon, rectum, anal canal and perineum.

7. Special Group

Vascular surgery (central and peripheral), lymphatics and lymph nodes. Paediatric surgery including congenital anomalies. Endocrine glands including suprarenals, skin and subcutaneous tissues. Principles of reconstructive surgery, organ transplantation, immunology and oncology.

Requirements of MS General Surgery to Enroll Graduate Students in the Program

- Fulfillment of University requirements for postgraduate study.
- Four (4) years of consecutive full-time advanced study and clinical training.
- Complete and approved master's thesis based on original research during the course of study in an area related to specialty, suitable for publication in a reputable medical & surgery journal.
- Must complete all didactic & clinical work in the required curriculum and satisfactorily pass all the University examinations.
- A minimum of 60% must be earned in all work/examinations attempted in the master's program. A grade below this will require re-examination.

A complete road map for postgraduate MS can be seen on University website at
http://www.szabmu.edu.pk/content/downloads/revised-road-map-for-postgraduate-residents.pdf

INTRODUCTION

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The residency program in General Surgery is a four-year course covering all aspects of Surgery in General & Special Surgery, leading to the degree of Masters Surgery (MS) in General Surgery. This curriculum has been developed in light of the core General Surgical Knowledge and basic Surgical skills required for a Level 7 category program and is indicative of the competencies required at the varying levels of training. The requirements within the specialty are delineated together with the knowledge, skills and attitudes achieved by the trainee in acquiring those competencies. The training has been devised on the basis of:

- Greater protection of the public interest by providing clear information as to the level of training achieved.
    - Improved access to specialty training than general practitioners.
    - Greater flexibility of training through the availability of multiple instructors.
    - Producing a competent workforce with the appropriate skills and knowledge necessary to meet the varying levels of treatment complexity, as well as considering the relative need and demand of potential patients.
    - Acquire the experience to carry out research projects, critically evaluate scientific publications and communicate clinical and research papers in journals and conferences.

RATIONALE

RATIONALE:

Need of program

This training program is structured keeping in view the need of the society. Effective provision of General Surgical facilities to the public at large especially in remote areas is need of the hour. An institute yielding proficient surgeons, well aware of the recent statutes of health care, is duly requires as a valuable addition to the health care system.

Purpose of training

The purpose of this curriculum is to guide the training of an individual to the core level of competence required for specialist and consultant. This training will produce consultant who are specialists in their field.

Context of Training

To provide an organized educational program with guidance and supervision, a structured training program will be followed so that each trainee is exposed to different aspects of the subject and acquires special knowledge and skill as expected in this program. The training will provide a basis for the candidate to develop into a lifelong learner who is capable of self-reflection and self-directed learning. It will provide a basis for further ongoing development in the field.

Duration of training

The program leading to MS in General Surgery will be of 04 years full time.

AIMS & OBJECTIVES

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Aims of Training

The candidate should acquire and become proficient in the skills required for General Surgery practice with an emphasis on Trauma and non- Trauma related Emergency Surgery, basic General Surgical Skills, Preoperative preparation, Intraoperative and post-operative care and management of complication with long term follow up. There is special concern for wound management and decision of treatment regimens and holistic management involving multidisciplinary treatment planning, and Intensive Care treatments. Due importance is paid to history taking and examination skills and appropriate use of laboratory and Imaging facilities for efficient and timely Correct diagnosis. The Competency required for a surgeon in specialty surgical procedures is primarily vested in the student. The candidate should demonstrate attitudes necessary for the achievement of high standards of surgery practice both in relation to the health needs of the population and to his/her own personal development.

Learning Objectives

At the end of the clinical training for MS General Surgery a trainee shall be able to:

1. Initially assess the patients seeking surgical treatment for their problems by:
    - obtaining pertinent history.
    - performing correct physical examinations.
    - formulating a working diagnosis.
    - deciding whether the patient requires:
        - ambulatory care or hospitalization.
        - referral to other health professionals.
        - emergency care including life saving measures.

2. Manage patients requiring surgical treatment as follows:
    - plan an enquiry strategy i.e. order appropriate investigations and interpret the results.
    - when required, perform specified surgical procedures independently and competently.
    - deal effectively and promptly with complications which may occur during the course of disease or treatment.
    - maintain records of patients including summarization and indexing.
    - seek consultation when needed.
    - carry out effective and efficient management of emergency situations.

3. undertake research and publish findings.
4. acquire new information; assess its utility and make appropriate applications.

5. Recognize the role of teamwork and function as an effective member/ leader of the team.
6. advise the community on matters related to promoting health and preventing disease.
7. train para-professionals and other/ junior members of the team.

On completion of training, the trainee will be able to achieve following aptitudes:

- 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

Specific Skill

- Take history and conduct clinical examination and investigations that allow evaluation of all surgical patients.
- Determine the differential, provisional and definitive diagnosis by interpreting and correlating findings from the history, clinical & radiographic examination together with other diagnostic tests.
- Devise treatment plans specific to the needs and expectations of individual patients.
- Execute conventional and contemporary techniques of all the domains of general surgery.
- Demonstrate competency in teaching methods, use of information technology, appraisal and assessment techniques and development of appropriate learning methods for lifelong learning.
- Show evidence of ability to undertake research.

Attitude

- Demonstrate a professional and ethical approach to patient care.
- Demonstrate a professional attitude to all the members of the team.
- Demonstrate full and clear understanding of equality and diversity legislation as it applies to the workplace and to professional practice.

ENTRY CRITERIA

ENTRY CRITERIA

Eligibility to apply for MS General Surgery

- Candidate must possess MBBS or equivalent degree and one-year house job from PMC recognized Institutions.
- Permanent valid registration with PMC.
- Declared successful in MS Part-I for University programs.
- In case of foreign candidate, valid registration with Medical Council of their country of origin must be produced.

Required Documents

Attested photo copies of the following documents must be attached with the application form:

- Computerized National Identity Card (CNIC)
- Domicile certificate
- Matric/O Level, FSc/A Level, Certificates or equivalent
- MBBS degree with detail marks certificates of all professional
- MBBS Attempts certificates of all professional
- NEB pass certificate (for foreign graduates)
- House Job certificates
- PMC valid permanent registration certificate
- MS Part-I passing certificate
- Experience Certificates (if any)
- Migration Certificate (To be produced at the time of admission)

Admission Procedure

- Details of admission procedure is available on university website at

  http://www.szabmu.edu.pk/admission/postgraduate-admission

CONTENT OF LEARNING

CONTENT OF LEARNING

The program outline addresses both the knowledge needed in a General Surgical Patient. A minimum of four years of formal training through a graded system of education as specified will equip the trainee with knowledge, skill and attitude at its completion to be able to practice basic general surgery competently.

The specific training component would include the following areas:

1. Establishing clearly defined standards of knowledge and skills required to practice General Surgery at secondary and tertiary care levels.

2. Understand Basic Sciences relevant to the surgical diseases and their Management.

3. General Surgery specialization areas:

- Principles of Wound Healing – knowledge of collagen synthesis stimulating and inhibitory factors primary and secondary intention prevention and treatment of dehiscence management of chronic wounds.
- Suturing techniques
- Fluid/Electrolyte and Acid/Base Physiology with understanding of the normal physiology of body water and minerals, common derangements and principles of treatment
- Critical Care: know the basic principles of hemodynamic monitoring, acid/base physiology, oxygen consumption, oxygen delivery, respiratory failure, ventilation support and nutrition
- Trauma: know the systematic approach to managing multiply injured patients, indications for operative and non-operative management and the pathophysiology of injury
- Surgical Oncology: understand the basic principles of solid tumor management, the role of surgery in the multidisciplinary approach to diagnosis and treatment and the natural history of the most common malignancies (breast cancer, colon and other GI cancers, melanoma).
- Emergent Non-traumatic Surgical Problems: know the approach to evaluation of acute abdominal pain, indications for emergent surgical intervention and the diagnosis, natural history and treatment of the most common conditions that present as surgical emergencies.
- Surgical Infections: understand the microbiology, predisposing factors, and treatment of nosocomial infection, post-operative wound infection and intra-abdominal abscess.
- Surgical Diseases: be familiar with the natural history, diagnosis, preoperative work-up, intra-operative approaches, post-operative management, and the recognition and treatment of post-operative complications of those diseases most commonly encountered by General Surgeons. These include:
    - Patients presenting with an acute abdomen
    - Assessment of the acute abdomen;
    - Peritonitis;
    - Acute appendicitis;
    - Acute presentation of gynaecological disease;

- Acute intestinal obstruction
- Manage infections of the skin and superficial tissues
- Superficial sepsis, including necrotizing infections
- Manage primary and recurrent hernia of the abdominal wall in the acute or elective situation
- Obstructed hernia
- Strangulated hernia
- Manage the patient with multiple injuries: the assessment of the multiply injured patient, including children
- Blunt and penetrating injuries
- Abdominal injuries especially splenic, hepatic and pancreatic injuries;
- Injuries of the urinary tract
- Vascular injury
- Provide specialist surgical support in the management of conditions affecting the reticulo-endothelial and haemopoetic systems
- Manage benign and malignant lesions of the skin and subcutaneous tissue
- Manage perforated peptic ulcer
- Manage acute GI haemorrhage
- Gastroscopy
- Endoscopy for lower GI problems

- Manage the patient presenting with upper gastrointestinal symptoms, including dysphagia and dyspepsia:
  - Elective oesophagogastric disorders
  - Manage the patient presenting with symptoms referable to the biliary tract, including jaundice
  - Acute gallstone disease
  - Acute pancreatitis
  - Elective HPB disorders
  - Manage patients with symptoms of lower gastrointestinal disease such as change in bowel habit:
  - Benign colon conditions
  - Colorectal neoplasia
  - Inflammatory bowel disease
  - Manage acute breast infection and recognize common breast conditions:
  - Manage varicose veins
  - Recognize the acutely ischaemic limb

4. Surgical Subspecialties:

To be familiar with the management of the most common symptom patterns, differential diagnosis, investigation and management of surgical conditions related to the following subspecialities:

- Emergency Surgery
- Central and peripheral nervous systems

- Head and neck surgery
- Thoracic surgery
- Gastrointestinal surgery
- Genitourinary surgery
- Laproscopic Surgery
- Traumatology
- Organ transplantation
- Surgical oncology etc.

I. Trauma/Emergency Surgery Service

- Explain the importance of mechanism of injury in the evaluation of the acutely injured patient.
- Describe the pathophysiology of acutely injured patients, including: Hemorrhagic shock
- Neurogenic shock
- Obstructive shock
- Traumatic brain injury
- Understand the role of imaging in the care of acutely injured patients.
- Describe the evaluation of the abdomen in the trauma patient.
- Delineate the steps in evaluation and management of long-bone and pelvic musculoskeletal injuries.
- Discuss perioperative fluid and electrolyte management.
- Articulate the evaluation and management of patients with postoperative fever.
- Explain the importance of injury prevention efforts.
- Understand the role of nutrition, physical therapy, rehabilitation, and family/social services in patient management.
- Take a history and perform physical examination to evaluate a patient with acute abdominal pain.
- The initial assessment and management of a patient in respiratory and/or cardiovascular arrest.
- Fluid management in resuscitation.
- Cardiovascular physiology and the basics of invasive monitoring techniques.
- Place bladder and gastric catheters.
- Basic principles of mechanical ventilation and troubleshooting common problems on mechanical ventilation
- Chest radiograph interpretation
- ABG interpretation
- ECG interpretation
- Basic principles of hemodynamic monitoring and introduction to the Pulmonary artery catheter
- Diagnosis and treatment of shock
- Management of various atrial and ventricular dysrhythmias
- Diagnosis and management of congestive heart failure
- Diagnosis and management of acute coronary syndromes
- The use of sedatives, analgesics, and neuromuscular blockade in the ICU
- The evaluation and initial management of oliguria and acute renal failure

- Basic principles of acid-base physiology
- Diagnosis and management of electrolyte disorders
- Nutritional assessment of the critically ill patient
- Administration of enteral and parenteral nutrition
- Evaluation and management of the anemic/thrombocytopenic patient
- Use of antithrombotic agents and blood products
- Central venous catheterization using ultrasound guidance
- Placement of chest tubes and arterial lines
- Introduction to bronchoscopy
- To appreciate the critical decision-making involved in the management of patients with vascular disease.
- The ability to construct a differential diagnosis, interpret investigations and construct a management plan for common conditions
- Undergoing exposure and training in a range of common surgical procedures
- Developing a number of generic and advanced operative skills specific to General Surgery
- Proficiency in handling critical and intensive care surgical illness
- Understand the indications, actions and monitoring of drugs used in the surgical diseases

II. **Anesthesiology / Perioperative Care**

- To introduce concepts of perioperative medicine including preoperative evaluation and intra- and post-operative management of the surgical patient
- To gain experience in the management of critical incidents, such as airway and vascular access.
- How to perform a preoperative evaluation of a patient including medical condition, physical status, airway examination, appropriate preoperative testing and the impact of anesthesia and surgery on their condition.
- General tenets of intraoperative medicine including monitoring (selection, steps in placement and basic interpretation of invasive monitors) and anesthetic options.
- How to recognize and manage common post-operative complications including pain, hypotension, respiratory depression, and myocardial ischemia.
- The pharmacology of anesthetic, sedative, narcotic and vasoactive medications.

III. Burn Service

- Understand early emergency care of burn patients including assessment of:
    - Airway, breathing, circulation
    - Extent and depth of burn
    - Need for burn center referral
- Comprehend fluid resuscitation in burn patients with respect to:
    - Fluid composition
    - Calculating fluid requirements
    - Monitoring adequacy of resuscitation
- Understand the pathophysiology, diagnosis and treatment of inhalation injury.
- Understand general principles of wound management including:
    - Topical antimicrobials
    - Skin grafting techniques

- Use of skin substitutes and biologic dressings.
- Develop a basic knowledge of the rehabilitation needs of burn patients.

IV. Orthopaedic Surgery

- Demonstrate ability to take a history and perform the appropriate physical examination for a patient with a musculo-skeletal problem.
- Demonstrate the ability to organize the information obtained from a history and physical examination, formulate a differential diagnosis, and recommend options for treatment
- Understand what types of diagnostic imaging studies are useful in the evaluation of musculoskeletal problems. Understand how to interpret basic findings on plain radiographs, such as normal anatomy, common types of fractures, arthritis.

- Participate in the preoperative evaluation, surgical procedure, and postoperative care of patients undergoing surgical treatment of musculoskeletal problems.
- Understand the clinical and radiographic findings & the treatment options and objectives of common musculoskeletal problems including:
  - Bone and joint injury
  - Fractures & dislocations
  - Acute soft tissue injury
  - Ligament, tendon, nerve injuries
  - Chronic soft tissue problems
  - Tendonitis/bursitis
  - Nerve compression/entrapment
  - Joint instability
  - Arthritis-degenerative and inflammatory
  - Metabolic bone disease-osteoporosis
  - Infection-bone (osteomyelitis) and joints (septic arthritis)
  - Neoplastic bone disease

V. Thoracic and Cardiovascular Surgery

- Learn the natural history and pathophysiology of cardiothoracic surgical diseases
- Be able to apply knowledge of cardiothoracic surgical diseases to the preoperative evaluation and postoperative care of a patient undergoing cardiothoracic surgery
- Develop a general understanding of surgical techniques and equipment specific to the specialty including the use of the cardiopulmonary bypass pump, hypothermia and tissue protection methods
- Learn about counseling activities to promote health
- The students should develop an appreciation of the procedures involved in the care of TCV patients, such as chest tubes, lines, monitoring, wound management, intubation, tracheostomies, gastrostomies, and VAC sponge treatment of wounds.

VI. Transplant Surgery

Establish a working understanding of the human immune system and ways to manipulate it as it applies to:

- Basic science of immunology
- Transplant recipients undergoing transplantation and the agents used
- Complications of immunosuppression likely to be encountered

VII. Hepatobiliary Surgery

- Comprehend surgery of the liver and biliary tract as it relates to:
- Surgical anatomy of the liver and biliary tract
- Hepatic resections for benign and malignant liver lesions
- Bile duct reconstruction or bypass for benign and malignant strictures.
- Whole organ, split liver, and live donor liver transplants
- Pancreas transplantation for type I DM
- Understand portal hypertension in terms of: Anatomy and pathophysiology of the portal venous system
- Evaluation, treatment, and resuscitation of hemodynamically significant upper gastrointestinal bleed
- Medical and non-shunt surgical therapy
- Non-selective, selective and TIPSS shunt therapy
- Principles of management of complex, post-operative patients recovering from major hepatobiliary surgery
- Evaluation of hepatic masses/ Liver imaging

VIII. Urology

- The students should learn the pathophysiological basis of all urological diseases that they encounter in the hospital.
- General surgical problems arising in the renal failure patients
- Participation in the care of all urological inpatients.
- Insertion of a Foley's catheter in a male and female patient.
- The evaluation, work-up and management of patients with urolithiasis, prostate cancer, bladder cancer, renal carcinoma, carcinoma of the testes and scrotal masses, female urology– including incontinence and prolapse and the management of bladder outlet obstruction
- Additionally, students should understand how to read imaging as it pertains to Urology including CT scan of the abdomen and pelvis – with specific reference to the retroperitoneum, kidneys, ureters, bladder, retroperitoneal lymph nodes, prostate, and have a basic understanding of renal ultrasound and MRI.
- Understand fundamentals of renal transplantation
- Indications for dialysis and transplantation

IX. Vascular Surgery

- To become proficient in the initial evaluation of patients with cerebrovascular, arterial occlusive, aneurysmal and venous disease.
- To understand the basic pathophysiology and treatment options for patients with cerebro-vascular, arterial occlusive, aneurysmal and venous disease.
- To become familiar with non-invasive testing for vascular disease.

X. Gastrointestinal Surgery

- Demonstrate proficiency in the assessment and management of:
- The acute abdomen
- Gastro-oesophageal reflux and its complications
- Hiatus hernia
- Peptic ulceration and its complications
- Radiation enteritis
- Infantile pyloric stenosis
- Diagnostic upper GI endoscopy
- Swallowed foreign bodies
- Gastrointestinal bleeding
- Appendicitis and right iliac fossa pain
- Abdominal pain in children
- Peritonitis
- Acute intestinal obstruction
- Intestinal pseudo-obstruction
- Strangulated hernia
- Intestinal ischaemia
- Toxic megacolon
- Superficial sepsis and abscesses
- Acute ano-rectal sepsis
- Ruptured aortic aneurysm
- Neoplasms of the GI tract

XI. Plastic Surgery

- Student should be able to conduct a basic physical exam and recognize important physical signs.
- Students should be competent in closure of cutaneous wounds.
- Specific items of knowledge that should be acquired during this rotation:
- Diagnosis of congenital anomalies of the head and neck including clefting and craniofacial anomalies.
- Physical diagnosis of hand injuries and disease.
- Diagnosis and treatment of skin cancers.
- Physiology of flaps and grafts.
- Breast cancer treatment including reconstructive options.

XII. Head & Neck surgery

- Maintenance of airway, Tracheostomy.
- Salivary gland disease.
- Lymph nodes
- Swellings of the neck
- Swellings of scalp and face
- Surgical flaps

- Oral malignancies

XIII. Neurosurgery

The student will acquire a fundamental knowledge including basic principles of Neurosurgery, along with recognition and surgical treatment of diseases of the central and peripheral nervous system.

XIV. Ophthalmologic Surgery

Students should be able to generally describe the basic organization/structures of the eye and the various ophthalmic subspecialties.

XV. Otolaryngology

- Improve understanding of otolaryngologic pathology and normal variants.
- Improve diagnostic skills for otolaryngologic pathology.
- Be able to perform a general head and neck exam.
- Establish evaluation and treatment for otolaryngologic pathology, including need for surgical options.

XVI. Surgical diseases of Reproductive System and Breast

- Surgical diseases of Prostate gland
- Pain and swelling in the scrotum
- Testicular diseases
- Principles of Endo Urology
- Gynaecological Surgery related to General Surgery, Pelvic inflammatory diseases, ectopic Pregnancy, ovarian cyst.
- Benign breast diseases
- Carcinoma breast
- Gynaecomastia
- Breast reconstruction
- Newer investigations in Pathology & Radiology

XVII. Surgical Oncology

- Epidemiology of cancer and tumor registries.
- Principles of cancer treatment by surgery, radiotherapy, chemotherapy,
- Immunotherapy and Hormone therapy
- Principles of molecular biology of cancer, carcinogenesis; genetic factors;
- Mechanisms of metastasis
- Cancer screening
- TNM staging principles
- Terminal care of cancer patients; pain relief

General Surgery

Competencies

COMPETENCIES

All students are expected to reach a level of competence in different years of training after performing at least a said number of procedures at various levels of competence. Students are initially observing with the supervisor performing, later they are directly involved for assistance. Subsequently the skill acquisition level is raised with the student performing under direct supervision and later independently, when supervision is indirect.

Given here is a list of competencies that the student is supposed to achieve working with the supervisor in charge, peaking the graph at an achievable pace for the student. The level of competency is denoted by a number, as mentioned, and the minimal number of cases listed.
Observer Status=1, Assistant status=2, Under Direct Supervision=3, Under Indirect Supervision=4

COMPETENCIES THIRD YEAR		
Competency	**Level of Competence**	**No. of cases**
A: Patient management		
Continue eliciting pertinent history	**4**	**100**
Performing physical examination	**4**	**100**
Ordering appropriate investigations	**4**	**100**
Interpreting the results of investigations	**4**	**100**
Assessing for fitness to undergo surgery	**4**	**100**
Deciding & implementing appropriate treatment	**3 & 4**	**100**
Postoperative management & monitoring	**4**	**100**
Presentation skills: 1 long case /week	**4**	**20**
Presentation skills: 2 short cases/week	**4**	**40**

COMPETENCIES THIRD YEAR		
Competency	**Level of Competence**	**No. of cases**
B: Preparation for Surgery		
Preoperative preparation for various surgical procedures	**4**	**80**
Aseptic techniques	**4**	**80**
Positioning of the patient for Perianal surgery, Thoracotomy, Laparotomy, Renal surgery, Head & neck surgery, Surgical procedure on the back Common surgical instruments & appliances	**3 & 4**	**80**
Common surgical including endoscopic instruments	**4**	**80**
Suture materials used in different surgical procedures/ stapling devices and techniques	**4**	**80**

COMPETENCIES THIRD YEAR		
Competency	**Level of Competence**	**No. of cases**
C-1 SURGICAL PROCEDURES AND MANAGEMENT		
Airway maintenance and passing of endotracheal tube.	**3 & 4**	**16**
Management of head injury	**2, 3 & 4**	**24**
IPPR and other methods of artificial respiration	**3 & 4**	**16**
Burn management	**4**	**12**
CPR	**4**	**4**
Controlling haemorrhage	**4**	**40**
Trauma management ATLS/ACLS	**4**	**60**
Debridement, wound excision, closure/suture of wound (excluding repair of special tissue like nerve and tendons)	**3 & 4**	**40**
Application of splints, POP casts, skin traction	**3 & 4**	**40**
Tendon repairs	**3 & 4**	**60**
Incision and drainage of abscesses40 (excluding deep seated abscesses in peritoneum and other serous cavities)	**4**	**40**
Uretheral catheterization using soft and hard catheters Uretheral dilatation	**4**	**40** **20**
Suprapubic puncture	**3 & 4**	**8**
Meatotomy	**3 & 4**	**10**
Circumcision	**3 & 4**	**20**

COMPETENCIES THIRD YEAR		
Competency	**Level of Competence**	**No. of cases**
C-2 SRGICAL PROCEDURES AND MANAGEMENT		
Lumbar puncture	**4**	**4**
Venesection	**4**	**16**
Placement of CVP line	**4**	**4**
Intercostal drainage	**3 & 4**	**8**
Biopsy of lymph nodes	**3 & 4**	**8**
Biopsy of skin lesions	**4**	**8**
Subcutaneous lumps or swellings	**3 & 4**	**16**
Excision of soft tissues tumors and cysts	**3 & 4**	**6**
Split skin graft	**2 & 3**	**6**
Tracheostomy	**3 & 4**	**8**
Cricothyroidotomy	**3 & 2**	**10**
Opening and closing of abdomen	**3 & 4**	**8**
Proctoscopy and interpretation of findings	**3 & 4**	**6**
Gastroscopy	**2**	**8**
Colonoscopy	**2**	**6**
Proctosigmoidoscopy	**3 & 4**	**8**
Liver Biopsy	**2 & 3**	**4**
Percutaneous needle aspiration under ultrasound guidance/ CT	**3 & 4**	**4**
Prostatectomy	**3 & 4**	**4**
Vesicolithotomy	**2 & 3**	**4**
Parotid surgery	**3 & 4**	**6**

COMPETENCIES THIRD YEAR		
Competency	**Level of Competence**	**No. of cases**
D: Abdominal Operation		
Hernial Repair	**3 & 4**	**12**
Operation on Scrotum and Testis	**3 & 4**	**12**
Hemorrhoids, fissure and fistula	**3 & 4**	**12**
Appendectomy	**4**	**20**
Cholecystectomy	**3 & 4**	**10**
Oesophagectomy	**2**	**4**
Intestinal resection and anastomosis	**3 & 4**	**8**
Stoma formation	**3 & 4**	**4**
Fundamentals of laparoscopic surgery	**2**	**16**
Laparoscopic cholecystectomy	**2 & 3**	**8**
Laparoscopic hernia repair	**2 & 3**	**4**
Use of stapling guns	**2**	**4**
E. Thoracic Surgery		
Chest intubation	**2 & 3**	**12**
Emergency thoracotomy	**1 & 2**	**12**
Rib resection	**1 & 2**	**8**

COMPETENCIES THIRD YEAR		
Competency	**Level of Competence**	**No. of cases**
F. Vascular Surgery		
Surgery for varicose veins	**2 & 3**	**10**
Embolectomy	**1, 2 & 3**	**9**
Vascular repair	**1, 2 & 3**	**8**
G. Surgery head, neck and other areas		
Breast operation	**3 & 4**	**16**
Thyroid, Parathyroid	**3 & 4**	**16**
Salivary glands and jaws	**3 & 4**	**10**
H. Anesthesia		
Local and regional anesthesia	**4**	**8**
Spinal and epidural anesthesia	**2 & 3**	**4**
Principles of GA/ anesthetic machines	**4**	**-**
Management of pain	**4**	**-**
Anesthetic agents and Muscle Relaxants	**4**	**-**

COMPETENCIES FINAL YEAR		
Competency	**Level of Competence**	**No. of cases**
A. Patient Management		
Continue eliciting pertinent history	**4**	100
Performing physical examination	**4**	100
Ordering appropriate investigations	**4**	100
Interpreting the results of investigations	**4**	100
Assessing for fitness to undergo surgery	**4**	100
Deciding and implementing appropriate surgery	**4**	100
Post op management and monitoring	**4**	100
Presentation skills: one log case/week	**4**	20
Presentation skills 2 short cases/week	**4**	40

COMPETENCIES FINAL YEAR		
Competency	**Level of Competence**	**No. of cases**
B. Preparation for Surgery		
Preoperative preparation for various surgical procedures	**4**	80
Aseptic techniques	**4**	80
Positioning of patient on table for: perianal surgery, thoracotomy, laparotomy, renal surgery, head and neck surgeries, surgeries on the back	**4**	80
Common surgical instruments and appliances (including endoscopic instruments)	**4**	80
Suture materials used in different surgical procedures/ stappling devices and techniques	**4**	80

COMPETENCIES FINAL YEAR		
Competency	**Level of Competence**	**No. of cases**
C1- Surgical Procedures and Management		
Airway maintenance and passing of endotracheal tube	**4**	16
Management of head injury	**4**	24
IPPR and other methods of respiration	**4**	16
CPR	**4**	8
Burn management	**4**	4
Controlling hemorrhage	**4**	60
Trauma management ATLS/ACLS	**4**	60
Debridement, wound excision, closure/suture of wounds (excluding special tissues like nerves and tendons)	**4**	60
Application of splints, cast, Skin traction, POP	**4**	40
Tendon repairs	**4**	4
Incision and drainage of abcesses (excluding deep seated abscesses in peritoneum or serous cavities)	**4**	40
Urthral catheterization using soft and hard catheters	**4**	40
Urethral dilation	**4**	40
Suprapubic puncture	**4**	8
Meatotomy	**4**	10
Circumcision	**4**	20

COMPETENCIES FINAL YEAR		
Competency	**Level of Competence**	**No. of cases**
C2- Surgical Procedures and Management		
Lumbar Puncture	**4**	4
Venesection	**4**	16
Placement of CVP line	**4**	6
Intercostal drainage	**4**	10
Biopsy of lymph node	**4**	10
Biopsy of skin lesions, subcutaneous lumps or swelling	**4**	8
Excision of soft tissue tumors and cysts	**4**	16
Split skin graft	**4**	8
Tracheostomy/ Cricothyroidotomy	**4**	4
Opening and closing abdomen	**4**	10
Proctoscopy and interpretation of findings	**4**	12
Gastroscopy	**3 & 4**	6
Colonoscopy	**4**	4
Proctosigmoidoscopy	**4**	6
Liver Biopsy	**4**	3
Percutaneous needle aspiration under ultrasound guidance/ CT	**4**	4
Prostatectomy	**3 & 4**	4
Vesicolithotomy	**4**	4
Parotid swelling	**4**	4

COMPETENCIES FINAL YEAR		
Competency	**Level of Competence**	**No. of cases**
D- Abdominal Operations		
Hernia Repair	**4**	12
Operation on scrotum and testis	**4**	12
Hemorrhoids, fissure and fistula	**4**	8
Appendectomy	**4**	12
Cholecystectomy	**4**	10
Esophagectomy	**2 & 3**	4
Intestinal resection and anastomosis	**4**	8
Stoma formation	**4**	4
Fundamental of Laparoscopic surgery	**3 & 4**	8
Laparoscopic cholecystectomy	**3 & 4**	4
Laparoscopic Hernia repair	**3**	4
Use of stappling guns	**3 & 4**	4
E- Thoracic Surgery		
Chest intubation	**4**	16
Emergency thoracotomy	**3 & 4**	8
Rib resection	**3 & 4**	8

COMPETENCIES FINAL YEAR		
Competency	**Level of Competence**	**No. of cases**
F- Vascular Surgery		
Surgery for varicose veins	**4**	12
Embolectomy	**4**	12
Vascular repair	**4**	8
G- Surgery of Head and neck and other areas		
Breast operations	**4**	16
Thyroid, Parathyroid	**4**	16
Salivary glands and jaws	**4**	12
H- Anesthesia		
Local and Regional anesthesia	**4**	8
Spinal and epidural anesthesia	**3 & 4**	4
Principle of GA/ Anesthetic machines	**4**	
Management of pain	**4**	-
Anesthetic agents and muscle relaxants	**4**	-

Log Book -Record of Clinical Cases

Longitudinal evaluation (Logbook, Assignments, Assessments)

Throughout the length of the course the performance of the candidate will be recorded on the Log Book. Completed and duly certified logbook will form a part of the application for appearing in the final examination. The Log Book will reflect the performance of the candidate in the following parameters:

a. Entries in log book should be on regular basis, and signed by the supervisor, certifying the work.
b. Record of competence of technical skills.
c. Record of the assignments.
d. Record of affective and interpersonal behaviors.
e. Record of Journal clubs, conferences, lectures and workshops attended.

Table: Specimen from Log book

DATE	HOSPITAL No.	NAME, AGE, SEX	DIAGNOSIS	PROCEDURE PERFORMED	PERFORMANCE OF TRAINEE*	SIGNED BY IMMEDIATE SUPERVISOR

*Key 1) Observer Status 3) Performed under supervision
2) Assistant Status 4) Performed independently

Mandatory Workshops

During training candidate will attend the following mandatory workshops arranged by the University:

i. Communication skills

The aim is acquisition of the students with an art of communication for an effective doctor patient relationship, where the art of history taking and the skill of advice and instruction communication is pivotal. This with also enhance the interpersonal communication at the hospital amongst early colleges and those in various departments of the hospital setting. Furthermore, the appearance of our students in clinical meetings, workshops, conferences and seminars will be exceptionally didactic both as participants and as presenters. Furthermore, a better skill to communicate will empower the students to present better in their assessments for the very program, especially, OSPE, long case, short case and thesis defense.

ii. Research methodology, Biostatics & Medical writing

As Research and recent advances are part and parcel of evidence-based practice, the university intends to endow in the students to raise intrigued healthcare professionals who intend to develop ease, both for the patient and the system by means of their queries and research. An elaborated session will provide a guideline as the first basic step towards thesis writing. Biostatistics will be introduced and statistics software introduction and basics workshop is carried out. Furthermore, the university provides the students with available Research and Biostatistics department as a continuum of guidance and help in their research works. Research Work is encouraged and a well-established ethical board and review committees for check of quality and virtues at all levels.

iii. Computer and internet skills

Since literature review is the essence of research, an effective student must vest in him the recent updates in regards to the available search engines and gadgets, the software and platforms which lead to better understanding of topics. The aim of the workshop is to empower the students to better inquire for their research questions and to be able to avail the maximum out of the broad horizon of information available.

iv. Basic Life Support

Basic knowledge and skills for emergency situations in an unresponsive patient as per recent updates and protocols are delivered to the students, ensuring an up to the mark health care professional for the society at large. The workshops are well equipped and test the candidate both in knowledge and hands on.

v. Surgical skills

This workshop is the pivotal for the emerging surgeons and provides knowledge together with hands on practice. The students see, learn, perform and continue to implement well learnt basic practices over the course of the clinical training.

Candidate will be Certified of the above-mentioned workshops by the University.

ROTATIONS

In the four years' clinical course in the department of General Surgery, mandatory rotation as an elective of six (06) months may be selected subject to the availability of slot, discretion of the supervisor, and willingness of the PG Trainee. Rotation is carried out in the allied specialties and aids for better understanding of management strategies for ailments presenting to the subspecialties. Following rotations are offered:

- Orthopaedics
- Paediatric Surgery
- Urology
- Plastic Surgery
- Neurosurgery

Rotations will begin on the first of the month for the prescribed time periods. The student will be assessed and certified by the Supervisor for each rotation. The Learning Objectives of the Rotation Chosen are mentioned in the Content of Learning section of this curriculum.

Thesis

One of the training requirements for the Degree is to undertake a research and write a Thesis on a topic related to the field of specialization. Firstly, the student shall prepare a synopsis under guidance of his supervisor. The synopsis should be in accordance with the guidelines to Synopsis written recommended by the University. Synopsis of the research must be approved from the Ethical Review Board (ERB) and the Advanced study & research board (AS&RB) before starting the research work. During process of Research the resident has to submit study data/result of project on quarterly basis to the Department of Medical Education (DME) and Biostatistician. Once the research is commenced, an elaborative document of the guided structure, the Thesis, is then submitted for approval. The thesis must be submitted for approval during the beginning of fourth year of training program. After review by three external examiners, approval of thesis from AS&RB, the Resident can appear in the final examination. The Thesis is then to be subjected to a seminar of thesis defence. A candidate shall be eligible for defence of thesis examination whether he/she shall be declared pass or fail in the theory examination. Defence of thesis examination comprising of a presentation and question/Answer session with a panel of examination. A score of 70% or above will fulfill the passing criteria.

The guideline for synopsis and thesis writing is available on University website at

http://www.szabmu.edu.pk/content/downloads/guidelines-for-synopsis-writing.pdf

http://www.szabmu.edu.pk/content/downloads/guidelines-for-thesis-writing.pdf

The thesis submitted by all post graduate residents shall comply with the instructions and guidelines for Thesis writing issued by the University. It shall form a distinct contribution to knowledge and afford evidence of originality, shown by the discovery of new facts, by the exercise of independent critical judgment and / or by the invention of new methods of investigation. It shall not include research work for which a degree has already been conferred in this or any other university/college. In the wake of fundamental improvements being introduced in the system of Higher Education in Pakistan, the credit, respect, recognition of research and scholarly publications, career development and financial gains are now linked with such original works accomplished without replicating the efforts of other researchers. Students are guided to work in light of HEC Plagiarism policy and put original effort to light.

I. Thesis Evaluation

There shall be a standing list of External Examiners for each discipline consisting of persons of eminence in the respective field of research. The list shall be suggested from time to time by the Board of Studies of the Department/ Institute, Board of Faculty concerned and approved by the Research Board. The External Examiners will be requested to critically examine the thesis for its suitability for acceptance.

The candidate shall in the first instance submit four unbound copies of his/her complete thesis along with an application on prescribed form for the evaluation of his/ her thesis, duly forwarded by his/her supervisor and the Head of General Surgery Department. The Vice Chancellor shall appoint three External Examiners from the approved list of External Examiners.

The reports of the examiners shall be placed before the Research Board for consideration. If two of the three Examiners find that the thesis is wholly inadequate it may be rejected by the Research Board.

If any of the examiners suggests modification/ revision of the thesis, the candidate shall be required to resubmit a revised version of the thesis duly certified by the supervisor, within one year (in case of Major Correction). The revised version of the thesis shall be approved by the same examiners (s) who suggested modification/ revision of the thesis (in case of Major Correction).

If any examiner finds the thesis adequate but suggests minor modification/ revision, this may be incorporated without referring again to the examiners. However, supervisor will recommend the correction.

The candidate will submit the research thesis in the final year of training, six months before completion of the training.

Thesis Evaluation Criteria for AS & RB

In pursuance of recommendations of Academic Council, decisions were taken about thesis evaluation of MS General Surgery thesis. Three (03) copies of thesis will be sent to three (03) external examiners for evaluation (28th February for Aug/Sep exam & 31st August for Mar/Apr Exam). In consideration of thesis evaluation reports, the Board's decision for thesis evaluation is as follows:

- If three examiners have accepted thesis with minor correction in present/accepted form thesis should be sent to the Advanced Studies & Research Boards (AS & RB) for further necessary action.

- In case two external examiners accepted thesis as minor in present/accepted form and third examiner reject the thesis, all thesis report will be rejected, and student must rewrite thesis.

- In case of two minor and one major corrections student will resubmit the thesis after three months.

- Time required for Thesis evaluation is within one year.

ASSESSMENT

ASSESSMENT

Assessment of trainees will cover the cognitive, psychomotor and affective domains. It will take two forms:

- Formative Assessment
- Summative Assessment

Formative Assessment

It is the continuous assessment of progress and competence. It will be conducted through workplace-based assessment throughout the training. Assessment will be undertaken by a range of assessors and will cover a range of procedures appropriate to the stage of training. Formative assessment will include:

- Directly observed practical skills (DOPS)
- Case based discussion (CbD)
- Mini clinical examination exercises (Mini-CEX)
- Multiple source feedback (MSF)

Residents will be evaluated by Supervisor quarterly throughout the Residency according to the syllabus/curriculum and report will be submitted to the Registrar office. A specified template form is used to submit the report (Annexure).

Summative Assessment

Summative assessment will be held twice:

1. Mid Term Assessment (MTA) Examination (At the end of 2nd year)
2. Final/Exit Examination (At the end of Final Year)

The level of performance required for passing the exam will depend on the knowledge and skills necessary for acceptable performance and will not be adjusted to regulate the number or proportion of persons passing the examination. The pass point will be determined by careful analysis and judgment of acceptable performance.

STANDARD ASSESSMENT PROTOCOLS / FORMAT OF EXAMINATIONS

Mid Term Assessment (MTA)

The Mid Term Assessment (MTA) examination is mandatory eligibility requirement for all Postgraduate Final examinations. Candidates are required to have passed MS Part-I, complete two years training in General surgery, get approval of their Synopsis from AS&RB and take the MTA Examination. In case of failure in the MTA examination, the trainees are permitted to continue their training but must pass the MTA examination prior to appear in the final examination.

Format of Examination

MTA Examination consists of the following components:

ASSESSMENT		
Written	Paper:100 One Best MCQs (100 Marks) **Part-A:** 50% MCQs from General Principles **Part-B:** 50% MCQs from Specialty Oriented	Pass Marks 60% Aggregate and Not Less than 55% in any Part (A Or B)
Assessment of Clinical & Technical Skills (ACTS/OSCE)	100 Marks 8-12 Stations	Pass Marks 60%
Total Marks		**200**

Format of Mid Term Assessment (MTA)

1. Multiple Choice Questions (MCQs)

The MTA comprises of two parts; A and B. Each MCQ carries 2 marks. There is no negative marking. MCQs are choose the best one type. Time available is minutes for each paper with a gap of minutes in between both A and B papers.

- Paper A comprises of 50 MCQs from Surgery in General.
- Paper B comprises of 50 MCQs from Allied specialties.

2. Assessment of Clinical & Technical Skills (ACTS/OSCE)

- **Eligibility**

A candidate shall be eligible for the ACTS/OSCE after passing MTA examination. He can

avail three consecutive clinical examinations after passing the exam.

A candidate availing/missed all the three consecutive chances of clinical examination after passing an MTA examination, he shall appear again in the theory examination.

- **Format**

ACTS/ OSCE will comprise of 12-18 stations of 5 to 8 minutes each with a change time of one minute for the candidate to move from one station to the other. The stations would have an examiner, a patient or both. Structured clinical tasks will be set at each station. The examiners using a global rating scale will assess the performance of each candidate. On stations where no examiner is present the candidates will have to submit written responses to short answer questions on a response sheet. There will be two types of stations: static and interactive. On static stations the candidate will be presented with patient data, a clinical problem or a research study and will be asked to give written responses to questions asked. In the interactive stations the candidate will have to perform a procedure, for example, taking history, performing clinical examination, counseling, assembling an instrument etc. One examiner will be present at each interactive station and will either rate the performance of the candidate or ask questions testing reasoning and problem-solving skills.

Final Postgraduate Examination

Final Postgraduate examination of MS General Surgery is comprising of following three (03) main components:

1. Theory Examination
2. OSCE & Clinical Examination
3. Defence of Thesis

1. Theory Examination

- **Format & Passing Criteria**

Paper	Type	Marks	Duration	Passing Criteria
Paper – I	One Best Type MCQ Paper	100	03 Hours	75 % in Aggregate and Not Less than 70% in any Paper
Paper – II	One Best Type MCQ Paper	100	03 Hours	

2. OSCE & Clinical Examinations

- **Eligibility**

A candidate shall be eligible for the OSCE & Clinical Examination after passing theory examination. He can avail three consecutive clinical examinations after passing a final theory examination.

A candidate availing/missed all the three consecutive chances of clinical examination after passing a theory examination, he shall appear again in the theory examination

- **Format & Passing Criteria**

OSCE & Clinical Examination is comprising of three components

i. OSCE
ii. Long Case
iii. Short Case

i. Format of OSCE

Observed Structured Clinical Examination (OSCE) will comprise of 12-18 stations of 5 to 8 minutes each with a change time of one minute for the candidate to move from one station to the other. The stations would have an examiner, a patient or both. Structured clinical tasks will be set at each station. The examiners using a global rating scale will assess the performance of each candidate. On stations where no examiner is present the candidates will have to submit written responses to short answer questions on a response sheet. There will be two types of stations: static and interactive. On static stations the candidate will be presented with patient data, a clinical problem or a research study and will be asked to give written responses to questions asked. In the interactive stations the candidate will have to perform a procedure, for example, taking history, performing clinical examination, counseling, assembling an instrument etc. One examiner will be present at each interactive station and will either rate the performance of the candidate or ask questions testing

reasoning and problem-solving skills.

ii. Format of long case

For assessment of the holistic approach of the candidate regarding patient management, each candidate will be allotted one long case and allowed 30 minutes for history taking and clinical examination. Candidates should take a careful history from the patient (or relative) and after a thorough physical examination identify the problems which the patient presents with. During the period a pair of examiners will observe the candidate. In this section the candidates will be assessed on the following areas:

- **Interviewing skills**
- Introduces one self. Listens patiently and is polite with the patient.
- Is able to extract relevant information.
-
- **Clinical examination skills**
- Takes informed consent
- Uses correct clinical methods systematically (including appropriate exposure and re-draping).
-
- **Case presentation/ discussion**
- Presents skillfully
- Gives correct findings.
- Gives logical interpretations of findings and discusses differential diagnosis.
- Enumerates and justifies relevant investigations.
- Outlines and justifies treatment plan (including rehabilitation).
- Discusses prevention and prognosis.
- Has knowledge of recent advances relevant to the case.
- During case discussion the candidate may ask the examiners for laboratory investigations which shall be provided, if available. Even if they are not available and are relevant, candidates will receive credit for the suggestion.

iii. Format of short cases

Candidates will be examined in at least four short cases for a total of 40 minutes jointly by a pair of examiners. Candidates will be given a specific task to perform on patients, one case at a time. During this part of the examination, the candidate will be assessed in:

- **Clinical examination skills**
- Takes informed consent.
- Uses correct clinical methods including appropriate exposure and re-draping.
- Examines systematically.

- **Discussion**
- Gives correct findings.
- Gives logical interpretations of findings.
- Justifies diagnosis/es.
- As the time for this section is short, the answers given by the candidates should be precise, succinct and relevant to the patient under discussion.

Component	Protocol Description	Marks	Duration	Passing Criteria
OSCE	8-12 Stations 60% Interactive 40% Static	100	5 to 6 minutes per stations	60% in Aggregate and Not Less than 55% in any Paper
Long Case	One (01) Case	100	50 Minutes	
Short Case	Four (04) Case	100	40 Minutes (10 Minutes for each case)	

If a candidate securing 60% or more marks in OSCE component He/She shall be exempted from this component in the next clinical examination until & unless he reappears in the theory examination.

3. Defence of Thesis

- **Eligibility**

A candidate shall be eligible for defence of thesis examination whether he/she shall be declared pass or fail in the theory examination

- **Format of Examination**

Defence of thesis examination comprising of a presentation and question/Answer session with a panel of examination.

- **Passing criteria**

  A score of 70% or above marks is required to pass.

  If a candidate shall be declared pass in the Defence of thesis examination, he/she shall be exempted from this component forever. Provisional Certificate, Transcript and Degree will be awarded only after passing all the components of the final MS General Surgery examination.

LEARNING RESOURCES

LEARNING RESOURCES

List of Essential Readings

Books:

Latest edition of the all of the following books:

1. Bailey and Love's Short Practice of Surgery, book by Henry Hamilton Bailey- 27th edition
2. The Washington Manual of Surgery- 6th edition
3. Browse's Introduction to The Symptoms &Signs of Surgical Disease- 6th Edition
4. Farquharson's Textbook of Operative Surgery- 9th edition
5. Hamilton Bailey's Emergency Surgery- 13th Edition
6. Kirk's Basic Surgical Techniques International Edition, Book by Fiona Myint- 7th edition
7. Atlas of Surgical Operations, Book by Jr Robert Zollinger- 9th edition
8. Fischer's Mastery of Surgery- 5th edition (2 Volumes)

Journals:

Issues of last two years of the following journals

- Journal of the American College of Surgeons (JACS)
- Journal of College of Physicians and Surgeons, Pakistan (JCPSP)
- Journal of Pakistan Medical Association (JPMA)

ANNEXURE

Supervisor Evaluation Form

SUPERVISOR'S INTERNAL ASSESMENT/EVALUATION PROFORMA FOR MS

PGR Name: _____ Session: _____ Specialty: _____

University Registration No: _____

Period: From_____ To _____

1.	Generic Competencies		
	(Please score from 1 - 100. 75% shall be the pass marks)	Component Score	Score achieved
	Patient Care	20	
	Medical Knowledge and Research	20	
	i Practice and System Based Learning • Journal Clubs	04	
	• Audit Projects	04	
	• Medical Error Investigation and Root Cause Analysis • Morbidity / Mortality / Review meetings	04	
	• Awareness of Health Care Facilities	04	
		04	
	iv. Communication Skills	10	
	• Informed Consent • End of life decisions	10	
	v. Professionalism	04	
	• Punctuality and time keeping	04	
	• Patient doctor relationship	04	
	• Relationship with colleagues • Awareness of ethical issues	04	
	Honesty and integrity	04	
2.	Specialty specific competencies		
	Please score from 1 - 100. 75% shall be the pass marks		Score achieved
	Operative Skills / Procedural Skills		
3.	**Multisource Feedback Evaluation**(Please score from 1 - 100. 75% shall be the pass marks)		

4.	**Candidates Training Portfolio** (Please score from 1 - 100.75% shall be the pass marks)		
	(Please score from 1 -100. 75% shall be the pass marks)	Component Score	Score achieved
	I. Log book of operations and procedures	**25**	
	II. Record of participation and presentation in academic activities	**25**	
	III. Record of publications	**25**	
	IV. Record of results of assessments and examinations	**25**	

Total marks obtained _____ Signature of Supervisor _____

Name & Stamp _____