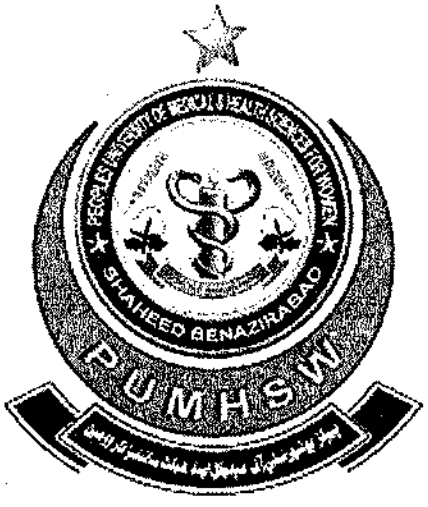
CURRICULUM



MASTERS IN SURGERY
DEPARTMENT OF SURGERY

Peoples University of Medical & Health Sciences,
Nawabshah, Sindh

CONTENTS

INTRODUCTION

Each year the post Graduate department of PUMHS runs Examinations as part of its masters program. Success in these, and the required pre-exam training, qualifies the medical graduate to become a Master of Surgery. To ensure adequate training, post graduate department of PUMHS offers subject and core subject discipline outlines and training accreditation to help graduate and their supervisors cover the large amount of work needed to prepare for examination and acceptance as master of any subject. The master examination is designed to identify those surgeon in training who have a broad knowledge of surgery in general and who can recognize and deal safely with the wide range of problems which may be met by the trainee surgeon. They should have reached a stage in their training when they can, for examples, take responsibility for surgical admissions to a general hospital dealing independently with urgent life- threatening conditions resulting from trauma or surgical disease and initiating necessary investigations and seeking senior specialist help if required. Successful candidate will be ready to on to go formal higher training in any of the surgical specialties or to less formal in-service training in those countries where higher training programmers are not available.

The emphasis of the examinations will be on the scientific and clinical knowledge required to undertake adequately the practice of surgery as outlined above. Candidates will therefore be expected to have broad knowledge of the relevant basic science underlying surgical practice: they should have an understanding of normal anatomy and physiology and the ability to identify an understand the pathology abnormal. They must understand the scientific basic of investigations and treatment. Emphasis in the oral examination will be placed on the interpretations of radiograph, and prints or transparencies of other imaging techniques, blood analysis reports, fluid balance and temperature charts and photographs of actual clinical conditions.

GENERAL INFORMATION / REGULATIONS:

The following regulations apply to all candidates entering for MS examination. Candidates will be admitted to the examination in the name (surname and other names) As given in the MBBS degree PMDC certificate.

ELIGIBILITY:

- MBBS or equivalent qualification registered with the PMDC.
- One year house job in an institution recognized by the PMDC.
- Deficiency of house job could be compensated by an equal period of residency in an institution recognized by the PMDC.

EXAMINATION : (ENTERY TEST)

- MS part-I Examination will be held once a year in the month of December
- English shall be the medium of examination.
- Any change in the dates and format of examination will be notified by the university before the examination.
- A competent authority appointed by the university has the power to debar any candidate from any examination if it is satisfied that such a candidate is not a fit person to take the college examination because of using unfair means / misconduct or other disciplinary reasons.
- The examination will consist of MCQ papers, 1 & 1.1 (BCQ types).

The post Graduate Department of University reserve the right to Alter / Amend any rule / Regulations

Any decision taken by the PGD on the interpretation of these regulations will be binding on the applicant.

Master degree of the university is awarded to those applicants who have:

- Passed the relevant MS part-I examination
- Undergone four year of supervised accredited training
- Been declared successful in examination of MS-II carried out by the postgraduate department of the university.

ELIGIBILITY FOR MS-II:

1. Passed MS-I in general surgery
2. Undergone four year of supervised accredited training (one year rotation in subspecialties).
3. Thesis approved
4. Workshops
5. Logbook

DURATION

04 year which includes rotations in allied specialties.

REGISTRATION

All training must be supervised and trainees are required to register with postgraduate department.

TRAINING PROGRAM

OBJECTIVE:

1. At the end of the training for MS a candidate shall be able to assess the patients seeking surgical treatment for their problem by:

- Obtaining pertintent history
- Performing physical examination correctly.
- Formulating a working diagnosis.
- Deciding whether the patient requires.
  - Ambulatory care or hospitalization.
  - Referral to other health professional.
  - Emergency care including life saving measures

2. Manage patients requiring surgical treatment as follows:

- Plan enquiry strategy i.e. Order appropriate investigation and interpret the results
- When required perform specified surgical procedure independently and competently.
- Deal effectively and promptly with complication which may occur during the course of disease.
- Seek consolation when needed
- Carry out effective and efficient management of emergency situations.

3. Undertake research and publish finding.
4. Acquire new information; assess its utility and make appropriate applications.
5. Recognize the role of teamwork and function as an effective members / leader of the team.
6. Advise the community on matters' related to promoting health and prevention disease.
7. Train paraprofessionals and other junior members of the team.

LEARNING OUTCOMES:

- Following is list of learning outcomes
- Learning outcomes relating to.

COGNITION

Skills:

- Written communication skills
- Verbal communication skills
- Patient management skills
- Skills in research.

Attitude:

- Towards patients
- Towards self developments.
- Towards society.

Supervisor:

A supervisor is a specialist with post graduate qualification recognized by university. Supervisor has to not only ensure and monitor adequate training. Every supervisor is to participate in supervisor's workshop. Every efforts should be made for the training of trainee and should have reliable liaison for the said task between university and trainee. Supervisor must ensure about completion of log book and provide assessment reports and feed back at the end of each year of training program and also submit confidential reports on trainee's progress.

Guidelines for supervisors:

1. The log book id day to day record of the clinical and academic work done by the trainee.

2. Its purpose is to assess the overall training of the candidate and to determine deficiencies if any so that they may be corrected.

3. The supervisor or any other designated trainer (Consultant / Associate / Assistant Professor / RMO) who is capable of testing the competence of the trainee in the specified area should ascertain that the entries in the log book are complete in all respects. They should then the accomplishment of desired competency by signing in the appropriate column soon after the activity is conducted.

4. The head of the unit shall authenticate the entries by signing the certificate. It is suggested that the heads of the unit check the log books at least once a month so that they can spot any deficiencies or otherwise in the training (e.g. the trainee has not rotated through a subspecialty which he / she should have.

TRAINEE AND GUIDELINE:

The trainee should

- Be keen and curious and diligent about source of information and infrastructure and use these supports effectively.

- Write synopsis / research protocol and submit this by end of first year of their registration with the advanced board of study / ethical Committee.

- Have regular contact with supervisor about his problem if these is some difficulty in it should be notified to PCD.

- Submit the completed thesis after checked by supervisor and ensure that the supervisor has all the relevant raw data prior to submission of thesis.

- Submit yearly summary sheets of the log books dully filled and signed by the Supervisor.

GUIDELINES FOR TRAINEE:

1. The log book is intended for documenting all the activities performed by the trainee during the training period.
2. Entries must commence from the start of the training program.
3. Trainees are advised to make the required entries on the day of the event.
4. The immediate supervisor must sign all entries on the day of the events
5. Completed and duly certified log book will from a part of the application for
6. appearing MS-II examination.

THE SUMMARY SHEET:

1. This form part of the formative assessment.
2. It identified the various competencies as well as the level of Competence that has been achieved during a specified year of training.
3. The trainee should fill the number of encounters at each level of competence and also enter the total number of encounters at the end of each year.
4. Entories should be made legibly in black ink since the forms will be scanned by computer.
5. The trainee should fill the summary sheet at the end of each year. This should be double - checked by the supervisor before signing and submitting the sheet to the college for analysis, assessment and feedback.

Core curriculum

Candidate for the examination of the MS Part-I are expected to have a sound working knowledge of the structures and functions of the human body and the various mechanism whereby these structures and functions are altered leading to diseased states. The emphasis in the MS Part-I examination is on comprehension of the various mechanisms by which the body works and adjusts to external and internal changes. Concepts of the integration and interrelationship of various parts of the body are to be given more importance than fine details of structure and function.

The **out line** of various topics given in this syllabus is a guide to what at the moment are considered to be important topics which the candidate is expected to know. This is to help both the candidate and the examiner in defining the minimum boundaries of MS Part-I examination.

SURGICAL ANATOMY

Candidate will be required to have knowledge of the structure and function of all systems of the body where applicable to common clinical conditions. A basic knowledge of histology will be required in order to understand the function of tissues and organs as well as embryology will not be required other than a understanding of the embryological basis of those congenital anomalies which are compatible with life, but which require surgical correction either in the neonatal period or later in life.

Nervous system: Head and Neck:

The anatomy of the scalp and cranial cavity in relation to head injuries and raised intracranial pressure.
CFS formation and circulation.
Origin, course distribution and testing of cranial and peripheral nerves.
General organization and function of the autonomic nervous system.
Anatomy relevant to common operations in the neck, such as biopsy of cervical nodes.

Respiratory System:

Anatomical basis of maintenance of the airways, tracheostomy, laryngotomy and the management of crushing and penetrating wounds of the chest. Thoracic walls, intercostals spaces, diaphragm and surgical approaches to thoracic viscera. Surface marking of pleura, lungs and heart. Anatomy of thoracic viscera. Anatomical aspects of paracentesis, thoracic and chest drainage.

Cardiovascular system:

Heart, pericardium, coronary circulation.
Major arteries and veins course and distribution where relevant to injury, disease, investigations and surgical procedures.

Gastro-intestinal system

Anatomy relevant to the function, pathology and surgery of the gastro-intestinal tract and related structures.

The general configuration of the peritoneal cavity.

Anterior and posterior abdominal walls and relationship of viscera.

Anatomical aspects of abdominal incisions, paracentesis abdominis, inguinal and femoral hernia.

Anatomy relevant to common problems of the pelvic floor, anal canal, sphincters and ischio-rectal fossa.

Genito-urinary system

Anatomy relevant to function, pathology and surgery of urinary tract and male and female genital organs.

Endocrine system and breast

Anatomy relevant to function pathology and surgery of the endocrine organs and the breast.

Musculo-skeletal system

Anatomy relevant to the function pathology and surgery of bones and joins and of the main muscle groups (without details of individual muscle attachments).

The anatomical basis of investigations, assessment and initial management of common soft tissue injuries, fractures, articular, vascular and peripheral nerve injuries and hand infections. The emphasis will be on anatomy relevant to acute trauma.

SURGICAL PHYSIOLOGY

There will be emphasis on the pathophysiology and treatment of fundamental surgical situation, such as organ failure, increased intracranial pressure or shock. Detailed knowledge related to the surgical specialties such as bone metabolism or the detailed biochemistry of secretion and control of hormones will not be required.

Blood and reticulo-endothelial system

Function of the haemopoietic and reticulo-endothelial system.
Blood group and transfusion of blood products; hazards of transfusion.
Haemostasis and firbriolysis; control of haemorrhage.
Function of the plasma proteins.

Nervous System

General principles of excitable tissues; synaptic transmission in somatic and autonomic nervous systems.
Drugs affecting neurotransmitters.
Pain and control.
Management of the unconscious patient and spinal injuries.

Respiratory System

Mechanism of respiration and the general principles of respiratory control; factors which affect them e.g. Drigs, trauma and shock lung.
Transport of oxygen and carbon dioxide.
Assessment of pulmonary function; reppiratory failure and other common derangements of respiratory function.
Oxygen therapy and ventilatory support.

Cardiovascular system

Assessment of cardiac and vascular function and monitoring techniques.
Control of heart, ECG.
Cardiac failure, inotropic and chronotropic drugs.
Blood flow and its measurement.
Capillary function and fluid exchange.
Pathophysiology and management of shock.
Control of body fluid compartments.
Oedema and lymphatic function.

Gastro- intestinal system

Physiology and assessment of abnormalities of secretion, absorption and motility.
Endocrine function of the gastro-intestinal tract.
Function of the hepato-biliary system and the pancreas and their assessment.
Jaundice and hepatic failure.

Urinary system

Function of the urinary tract and its assessment.
Control of water balance and osmoregulation.
Management of oliguria and renal failure.

Endocrine system

Function, secretion and control of hormones and assessment (detailed biochemistry required).
Testicular and ovarian function.

Muscolo-skeletal system

Principles of physiology of muscle, joints and bone.
Calcium metabolism.

General

Acid base balance and its disturbance.
Fluid and electrolyte balance and its disturbance.
Normal nutritional requirements, Eternal and parenteral nutrition.
Metabolic response to trauma and sepsis.
Pathophysiology and management of burns.

SURGICAL PATHOLOGY

The candidate will be expected to have a sound knowledge of the principles of pathology and microbiology (including virology) in a surgical context, including inflammation, infection and neoplasia, response of the tissue to injury, disturbances of growth (metaplasia, atrophy, hypertrophy and hyperplasia) degenerative processes, and repair and regeneration. With regard in common and important conditions encountered in the major surgical specialties, the candidate will be expected to have a broad knowledge of the pathology and principles of management.

General immunology

Immune response (humoral and cellular), immunodeficiency, immunosuppression, organ transplantation and pathophysiology of rejection.

Genetics

Genetics as applied to surgical practice.

Neoplastic disease

Pathology, surgery, radiotherapy, chemotherapy immunotherapy.

Management of multipltrauma (including war injuries)

Rehabilitation

Principles of management following amputations, gastro-intestinal resection and stomata cardio-pulmonary disease and major trauma.

Pathology Specimens

Biopsy techniques frozen sections, handling fixation and transport of specimens.

Aspiration cytology.

Quality Assurance

Surgical audit computing in medicine clinical research techniques and statistical methods in surgery.

SYSTEMATIC

Nervous System

Neoplastic conditions.

Raised intracranial pressure, skull fractures, closed head injuries and spinal injuries

Respiratory System

Neoplastic conditions of tracheo-bronchial tree, Intrathoracic sepsis. Chest trauma.

Cardiovascular System

Aneurysms.

Peripheral vascular disease.

Coronary artery disease.

Thrombosis / embolism.

Venous insufficiency and lymphoedema.

Gastro-intestinal System

Salivary gland conditions.

Neoplastic inflammatory and functional conditions of the gastro-intestinal tract. Peptic ulceration. Gastro-oesophageal reflux.

Inflammatory bowel disease, Diverticular disease.

Intestinal fistula.

Biliary disease.

Acute and chronic panceratitis.

Cirrhosis and portal hypertension.

Acute abdominal emergencies.

Hernia.

Genitor-urinary system.

Neoplastic conditions of the genito-urinary system.

Obstructive uropathy. Infection and stone.

Testicular maldescent and scrotal swellings.

Endocrine and breast

Benign and malignant breast disease.

Disease of thyroid, parathyroid adrenal and pituitary glands.

Implication of endocrine disease on surgery in general.

Musculo-skeletal system and soft tissue

Neoplastic conditions of skin soft tissue and bone. Infections of bone and joint.
Degenerative conditions.
Disorders of foot and hip in children. Compression neuropathies.
Bone joint tendon and nerve injuries.
Principles of skin cover by grant and flaps.

CORE CURRICULUM

MS PART-II

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.

1. Principles of surgery
2. Surgery of the head, neck and face and neurosurgery.
3. Orthopedic and trauma.
4. Genito urinary system.
5. Thorax.
6. Abdomen.
7. Special groups

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 to at least observe very procedure being performed and. If possible, 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, bums, tissue transplantation, anesthesia, complication of surgery physiological monitoring of patients, per and post operative care.

2. Surgery of the head need and face and neurosurgery

Congenital anomalies, anomalies, tumors of head and neck, infections, head injury, intracranial lesiona, thyroid, parathyroid, lymph nodes and lymphatic, spinal cord, and peripheral nerves, cervical spine, oral cavity, salivary glands, teeth and gums.

3. Orthopedic and trauma

Diseases of the skeleton including spine, fractures, dislocations, hand and foot, amputations.

4. **Genito-Urinary system**

Investigations, kidney, ureter, bladder, prostate, penis, urethra scrotum, tests, epididymis, vas deferens, varicocele, congential, anomalies.

5. **Thorax**

Thoracic inlet, chest wall, beast, pleura, mediastinum, lungs, heart. Large vessels, thymus, diaphragm, esophagus.

6. **Abdomen**

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

7. **Special group**

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

CORE COMPETENCIES

The clinical skills which a specialist must have are varied and complex. A complete list of the same necessary for trainee and trainers in given below. It is arranged year wise and the level of competence to be achieved each year is arranged and follows.

1. Observer status
2. Assistant status
3. Performed under direct supervision
4. Performed indirect supervision
5. Performed independently

COMPETENCY LEVELS IN PATIENTS MANAGEMENT

COMPETENCIES	1 year	2 year	3 year	4 year
A. Patients Management				
Eliciting pertinent history	5	5	5	5
Performing physical examination	5	5	5	5
Ordering physical examination	3	4	5	5
Interpreting the results of investigation	3	5	5	5
Assessing for fitness to undergo surgery	4	5	5	5
Deciding & implementing appropriate treatment postoperative management monitoring	3	4	5	5
	4	5	5	5
Presentation skills: I log case & 2 short cases/ week	4	5	5	5
B. Surgical knowledge and application of the following				
Preoperative preparation for various surgical procedure (instead below)	5	5	5	5
Aseptic techniques	5	5	5	5
Positioning of patient on operation table. • Perineal surgery	4	5	5	5

• Thoracotomy • Laparotomy • Renal surgery • Head & neck surgery • Surgical procedure on the back				
Common surgical instruments & appliances (including endoscopic instruments)	5	5	5	5
Suture materials used in different surgical procedures stapling devices and techniques	4	5	5	5

COMPETENCIES	1 YEAR	2 YEAR	3 YEAR	4 YEAR
Operation and closing abdomen	5	5	5	5
Procoscopy and interpretation of findings	5	5	5	5
Gastrosopy	2	3	4	5
Colonoscopy	2	3	4	5
ERCP	2	2	2	2
Proctosgmoidoscopv	4	5	5	5
Liver biopsy	4	5	5	5
Percutaneous needle aspiration under Ultrasound guidance CT scan	4	5	5	5
D. Abdominal operation				
Hernia repair	3	4	5	5
Operation on scrotum &	3	5	5	5
testis				
Hemorrhoids fissures, fistulae	3	5	5	5
appendectomy	3	5	5	5
Cholecystectomy	3	4	5	5
Oesophagectomy	1	2		2
Intestinal resection and	3	4	5	5
anastomosis				

Laparoscopic surgery Breast operation	1 3		2 4	2 5
E Orthopedic Surgery				
Closed treatment of common fractures		4	-	5
Open reduction plating mailing, intramendullary writing & external fixation		2		5
Operative treatment of deformities		2	-	5
Operrative on tendons (repair & lengthening)	-	2	-	5
Nerve repair	-	2	-	5
Stapler anatomies	2	2	2	2

E. Orthopedic Surgery

COMPETENCIES	1 YEAR	2 YEAR	3 YEAR	4 YEAR
Closed treatment of common fractures	-	4	-	5
Open reduction, plating, mailing, inlratnedullary wiring & external fixation	-	2	-	5
Operative treatment of deformities	-	2	-	5
Operation on tendons (repair & lengthening)	-	2	-	5
Nerve repair	-	2	-	5

L. Anaesthesia

	1 YEAR	2 YEAR	3 YEAR	4 YEAR
Local anaesthesia	-	5	-	-
Regional anaesthesia	-	4	-	-
Lumber puncture & spinal anaesthesia	-	5	-	-
Epidural block	-	5	-	-
Principals of general anaesthesia	-	4	-	-
Anaesthetic agents & muscle relaxants	-	4	-	-
Management of pain				

ROTATIONS

A certificate testifying the candidate's attendance is obligatory for admittance to the final examination and an entry in the logbook must also appear to this effect. The Trainer should arrange for the sub-specialty training.

Sub-specialty training:

During training in Surgery, the candidates must rotate through the following surgical sub-specialty units for three month each.

- Orthopedic surgery
- Urological Surgery.
- Neurosurgery
- Plastic surgery

LOG BOOK

Trainees are required to maintain a log book. These log books will be sent to candidates by the PGD after they become registered for training.

WORKSHOPS

1. Research methodology
2. Medical writing
3. Communication skills
4. Basic life support
5. Computer & internet

M.S Part -I

Paper -I (BCQ Type)

- Anatomy 30%
- Physiology 25%
- Pathology 45%

M.S Part -II

1. Theory

- Paper-I BCQ 100 marks
- Paper-II Short Notes 100 marks
- Paper-III Long Essay 100 marks

2. Clinical

- Long case 100 marks
- Short case 100 marks
- Table Viva 100 marks