



**BHARATH INSTITUTE OF HIGHER EDUCATION  
AND RESEARCH**

# **Program**

# **MS General Surgery**

**(Revised with effect from 2015-2016 onwards)**

## Goals

The goals of postgraduate training course in General Surgery would be to train a MBBS doctor who will:

Practice surgery efficiently and effectively, backed by a sound scientific knowledge and skill base.

Shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology;

Exercise empathy and a caring attitude and maintain high ethical standards.

Continue to evince keen interest in continuing surgical education

Be a motivated 'teacher' –to share his knowledge and skills with a colleague or a junior

Shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy.

## Objectives:

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the three year course. The Objectives may be considered under the subheadings.

Knowledge (Cognitive domain)

Skills (Psycho motor domain)

Human Values, Ethical practice and Communication skills.

### **Program Outcomes**

PO1: Practice surgery efficiently and effectively, backed by a sound scientific knowledge and skill base.

PO2: Acquire a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology;

PO3: Exercise empathy and a caring attitude and maintain high ethical standards.

PO4: Continue to evince keen interest in continuing surgical education

PO5: Be a motivated 'teacher' –to share his knowledge and skills with a colleague or a junior

PO6: Shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy.

### **Program Specific Outcomes**

PSO1: Describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children.

PSO2: Describe indications and methods for fluid and electrolyte replacement therapy including blood transfusion.

PSO3: Describe common malignancies and their management including prevention.

PSO4: Demonstrate understanding of basic sciences relevant to General Surgery.

PSO5: Recognize conditions that may be outside the area of his specialty / competence and to refer them to proper specialist.

PSO6: Update himself by self study and by attending courses, conferences and seminars relevant to surgery

PSO7: Teach and guide his team, colleagues and other students.

PSO8: Undertake audit and carry out research with the aim of publishing his work and presenting his work at various scientific fora.

PSO9: Take a proper clinical history, examine the patient, perform essential diagnostic procedures , order relevant tests and interpret the results to come to a reasonable diagnosis about the surgical condition.

PSO10: Perform minor operative procedures and common general surgical operations independently.

PSO11: Provide basic and advanced life saving support services (BLS & ALS) in emergency situations.

PSO12: Manage acute abdominal emergencies and poly trauma.

PSO13: Management of wounds including burn wounds.

PSO14: Preoperative and post operative care of the patient.

PSO15: Adopt ethical principles in all aspects of his surgical practice. Professional honesty and integrity are to be fostered. Surgical care is to delivered irrespective of the social status, caste, reed or religion of the patient.

PSO16: Develop communication skills and to obtain an informed consent from the patient.

PSO17: Provide leadership and get the best out of his team.

PSO18: Apply high moral and ethical standards while carrying out human or animal research.

PSO19: Accept the limitations of his knowledge and skill and to ask for help from colleagues when needed.

PSO20: Respect patients' rights and privileges

### **Components of the postgraduate curriculum:**

The major components of the Postgraduate curriculum shall be :

Theoretical knowledge

Practical and clinical skills

Thesis skills.

Attitudes including communication skills.

Training in research methodology

### **Knowledge:**

Objectives related to knowledge and higher cognitive abilities that are expected to be achieved during the course are given below.

At the end of training, the candidate must be able to:

Describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children.

Describe indications and methods for fluid and electrolyte replacement therapy including blood transfusion.

Describe common malignancies and their management including prevention.

Demonstrate understanding of basic sciences relevant to General Surgery.

Recognize conditions that may be outside the area of his specialty / competence and to refer them to proper specialist.

Update himself by self study and by attending courses, conferences and seminars relevant to surgery

Teach and guide his team, colleagues and other students.

Undertake audit and carry out research with the aim of publishing his work and presenting his work at various scientific fora.

### Skills

Take a proper clinical history, examine the patient, perform essential diagnostic procedures , order relevant tests and interpret the results to come to a reasonable diagnosis about the surgical condition.

Perform minor operative procedures and common general surgical operations independently.

Provide basic and advanced life saving support services (BLS & ALS) in emergency situations.

Manage acute abdominal emergencies and poly trauma.

Management of wounds including burn wounds.

Monitoring patients

Preoperative and post operative care of the patient.

### ***Human values, Ethical practice and communication skills***

Adopt ethical principles in all aspects of his surgical practice. Professional honesty and integrity are to be fostered. Surgical care is to delivered irrespective of the social status, caste, reed or religion of the patient.

Develop communication skills and to obtain an informed consent from the patient.

Provide leadership and get the best out of his team.

Apply high moral and ethical standards while carrying out human or animal research.

Accept the limitations of his knowledge and skill and to ask for help from colleagues when needed.

Respect patients' rights and privileges

### Essential Knowledge

General Surgery today mainly covers abdominal operations, thyroid and breast diseases. A General Surgeon should also have knowledge of some common problems in allied specialties. Furthermore, he should be familiar with complications, current controversies and recent advances in these topics.

The topics are considered under:

Basic sciences

General Surgery topics

Specialty topics.

Basic sciences include **anatomy, physiology, biochemistry, microbiology and pathology as found in current textbooks. The stress is on applied anatomy of areas dealt with by surgeons , pathophysiology and surgical pathology.**

**General Surgery topics** including the following

History of Surgery
<b>Clinical history and examination</b> - detailed systematic history taking, clinical examination of various systems, coming to a provisional working diagnosis.
<b>Rationale of diagnostic tests</b> - Ordering diagnostic test with prioritizing the needs, based on the clinical, hospital and the patient's socioeconomic conditions.
<b>Informed consent / Medico legal cases</b> - Understanding the implications of acts of omission and commission in practice. Issues regarding Consumer protection Act.- Implications in a medico- legal case like accidents assaults etc.
<b>Communication skills with the patient</b> - Understanding clarity in communication, compassionate explanations and giving emotional support to at the time of suffering and bereavement.
<b>Principles of surgical audit</b> - Understanding the audit process and outcome. Methods adopted for the same. Basic statistics to understand and critically evaluate published research paper
<b>Principles of evidence based medicine</b> - Understanding journal based literature study; the value of textbook, reference book articles; value of review articles; original articles and their critical assessment. Understanding the value of retrospective, prospective, randomized controlled and blinded studies.- Understanding the principles and meanings of various biostatistical tests applied In these studies
Medical ethics / Social responsibilities of surgeons
<b>Use of computers in surgery</b>
Health insurance, Health Care financing Few lectures or a seminar on basic understanding of pharmacoeconomics.
Undertaking clinical audit
<b>Prospective data collection/ writing case reports and clinical papers</b>
Giving presentation / Computer presentation
<b>Preoperative work up</b> - concept of fitness for surgery; basic medical workup; workup in special situation like diabetes, renal failure, cardiac and respiratory illness; risk stratification
Principles of operative surgery like asepsis, antisepsis, sterilization

Surgical sutures, drains, prosthetic grafts
<b>Postoperative care-</b> concept of recovery room care; airway management; management of cardio vascular instability in this period; pain management
<b>Basic surgical instrumentation-</b> Principles of surgical instrumentation; their maintenance and sterilization
Surgical diathermy, Lasers, Harmonic scalpel
<b>Wound management-</b> wound healing; factors influencing healing; basic surgical techniques; properties of suture materials
<b>Assessment of head, chest and abdominal trauma and triage-</b> Assessment of a trauma victim, ATLS resuscitation; care at the site; triage; care in the accident department; criteria for immediate surgery; immediate workup and logical referral criteria
<b>Fluid electrolyte balance/Acid–Base metabolism-</b> The body fluid compartments; metabolism of water and electrolytes; factors maintaining homeostasis; acidosis and alkalosis
<b>Blood transfusion-</b> Blood grouping; cross matching; blood component therapy; complications of blood transfusion; blood substitutes; auto transfusions; cell savers.
<b>Surgical infections:</b> - Asepsis , antisepsis; microbiological principles; rational use of antibiotics; special infections like synergistic gangrene and diabetic foot infections. Hepatitis and AIDS. Tetanus, gas gangrene.
<b>Surgical nutrition-</b> nutritional assessment; metabolic response to stress; need for nutritional support; enteral nutrition; routes of access to GI tract; parenteral nutrition; access to central veins for nutritional support.
<b>Principles of Laparoscopy / GI endoscopy-</b> Laparoscopic instrumentation; physiology of pneumoperitoneum; complications of laparoscopy; diagnostic and therapeutic applications. GI Endoscopic instrumentation; Diagnostic and therapeutic applications of upper GI, Lower GI and ERCP studies.
<b>Principles of Oncology-</b> cell kinetics; causation of tumours; principles of oncologic surgery, radiotherapy, and chemotherapy, paraneoplastic syndromes; cancer pain management; palliative care.
<b>Principles of burn management</b> – types of thermal injury; assessment of extent; immediate management; late management; skin cover; rehabilitation.
<b>Principles of fracture management-</b> fracture healing; principles of immobilization; complications; principles of internal fixation.
<b>Airway obstruction / management-</b> anatomy of the airway; principles of keeping the airway patent; oropharyngeal airway; Endotracheal intubation; crico-thyroidotomy; tracheostomy
<b>Shock and pulmonary failure:-</b> types of shock; diagnosis; resuscitation; pharmacological support; ARDS and its causes, prevention, ventilatory support; SIRS, MODS
<b>Anaesthesia:-</b> stages of anesthesia; pharmacology of inhalational, intravenous and regional anesthetics; muscle relaxants
<b>Assessment of trauma;</b> multiply injured patient/ closed abdominal and chest injuries / penetrating injuries; fractures pelvis; urological injuries; vascular injuries; trauma scores
<b>Acute abdomen-</b> appendicitis/ peritonitis / perforated viscus / intestinal obstruction
<b>Hernias-</b> various types of hernias; their repair; synthetic materials for hernioplasty.

<b>Critical care-</b> cardiorespiratory failure- management of shock; including monitoring; sepsis scores; pharmacological support
<b>Pain control-</b> acute and chronic pain; cancer and non cancer pain; patient controlled analgesia
<b>Breast disease-</b> benign and malignant disease; diagnosis; investigation; screening for cancer; genetics of breast cancer.
<b>Thyroid disease</b> – solitary nodule; investigation; Multinodular goiter; Hashimoto’s disease; Thyrotoxicosis; Thyroid cancer.
<b>Upper GI disease</b> – esophageal disease and gastro duodenal disorders.
Hepato- Biliary disease
<b>Pancreatic disease</b>
<b>Colo rectal disease / anal disease</b>
<b>Soft tissue neoplasm</b>
<b>Endocrine disease</b>
Organ transplantation- Transplant immunology; Brain death
Introduction to the non-linear mathematics - the theory of chaos

**The specialty topics include the following:**

GI endoscopy and Laparoscopy:

Principles of GI endoscopy
Complications including infective considerations
Diagnostic and therapeutic GI endoscopy including upper GI , lower GI and pancreato Biliary systems
Physiology of pneumoperitoneum
Diagnostic Laparoscopy
Laparoscopic therapeutic procedures

Neuro surgery

Head and neck trauma; acute management and rehabilitation
Concept of brain death/ medico legal implications
Peripheral nerve injuries
Neoplasms of the brain and meninges
Acute and chronic infections of brain and meninges
CSF circulation ,Hydrocephalus

Spinal injuries
Monitoring intracranial tension

### Urology

Urological injuries
Urothelial tumours / Chemotherapy; urolithiasis
Prostatic hypertrophy
Hypospadias
Pyleonephritis / perinephric abscess
GU tuberculosis
Scrotal disease, Hydrocele; Testicular tumours
Endourology
Peritoneal dialysis/ CAPD / Haemodialysis
Transplantation/ harvesting kidney
Urinary diversion
Infertility / Vasectomy
Pyleoplasty / hydronephrosis

### Oncology

Imaging-CT/ MRI
Breast thyroid and GI malignancies
Head and neck tumours. Neck dissection
Chemotherapy/ Adjuvant therapy
Post excision reconstruction
Radiotherapy

### Plastic surgery

Burns management
Facial injuries
Principles of tissue transfer
Cleft lip and palate
Congenital defects of hand
Pressure sores
Principles of microsurgery



Hypospadias
Details of skin flap
Nerve repair
Vascular repair
Hand injuries/ tendon injury

#### Cardio- thoracic surgery

Flail chest/ thoracic trauma
Bronchogenic carcinoma
Endocarditis prophylaxis
Pulmonary function tests
Control of major haemorrhage
Operations on the diaphragm
Coronary artery disease
Valvular heart disease
Lobectomies and pneumonectomies
Oesophageal disease
Operations on thoracic aorta
Mediastinal tumours
Basics of congenital heart disease

#### Vascular surgery

Vascular imaging
A V malformation
Exposure of major arteries and veins/ vascular anastomosis
Varicose veins
Chronic venous insufficiency
Vascular emergencies – trauma, embolism
Peripheral vascular disease – Atherosclerosis, arteries- TAO
Details of vascular prosthesis

#### Paediatric surgery

Fluid and electrolyte management
Preparation for surgery / postop care
Hernias
Spinal fusion defects
Ventral defects

Undescended testis
Hypertrophic pyloric stenosis
Hirschsprung's disease
Diaphragmatic hernia
Tracheo oesophageal fistula
Anorectal anomalies
Necrotizing enteritis

#### Gynaecological surgery

Pelvic inflammatory disease
Ectopic pregnancy
Ovarian Cysts
Caesarean section
Family planning

#### Essential Surgical skills

Surgery is a skill-based discipline. The following list is drawn up with a view to specifying basic minimum skills to be acquired. While an attempt has been made to specify the year wise distribution of the learning of skills (in the latter part of curriculum), it is recognized that the process is a continuous one. The year wise distribution of the skills recommended are to be used as general guideline.

Provision of training in various specialty subjects has been made during the second year of the course. The list within the tables, indicates the surgical procedures that the students should, by the end of the course, be able to perform independently (PI) by himself / herself , performed with assistance (PA) ,observed (O) or have assisted the operating surgeon (A). Note, for all categories, the student washes up in the operating room. There may an overlap in the skill list between the General Surgery list and specialty list.

Skills may be considered under the following headings.

- Basic skills
- Ward procedures
- ICU procedures
- Emergency room procedures
- Preoperative work up
- Post operative care
- Minor surgical procedures
- Major operating room techniques
- General surgical procedures

## Specialty surgical procedures

### Basic skills

The student should have acquired certain skills during his under-graduation and internship. These skills have to be reinforced at the beginning of the training period. These skills include:

Procedure	Category	Year	Number
Insertion of I.V.lines, nasogastric tubes, urinary catheters, etc	PI	1	75
Minor suturing and removal of sutures	PI	1	75
Removal of tubes and drains	PI	1	50
Routine wound dressing	PI	1	100

### Ward procedures

Ward work forms an important part of the training of the surgeons. In addition to the touting examination of the patient with proper recording of findings, diligent practice of the following is recommended.

Procedure	Category	Year	Number
Abdominal Paracentesis including diagnostic Peritoneal Lavage	PI	II,III	3
Ability to teach undergraduates and interns	PI	1	NA
Blood sampling – Venous and arterial	PI	1	NA
Bone marrow Aspiration	PI	1	2
Wound debridement	PI	II	10
Communication skills with patients, relatives, colleagues and paramedical staff	PI	1	NA
Ordering laboratory and Radiological investigations and interpretation of the report in light of the clinical picture.	PI	1	NA
Proficiency in common ward procedures	PI	1	NA
FNAC/Trucut biopsy	PI	1	10
Hand held Doppler for varicose veins/arterial disease	PI	1	10
Per-rectal examination and Proctoscopy	PI	1	NA
Thoracocentesis, Tube thoracostomy	PI	II	5
Universal precautions against communicable diseases	PI	1	NA

Venesection	PI	1+II+III	5
-------------	----	----------	---

NA: Not applicable

### C) ICU Procedures

Procedure	Category	Year	Number
Insertion of Arterial lines	PI	II	10
Insertion of central venous lines	PI	II	10
Insertion of Endotracheal tubes	PI	II	10
Insertion of Peritoneal Dialysis Catheters	A/PA	1,II,III	5
Intercostal drainage	PI	II	5
Suprapubic puncture / Stab Cystostomy	PI	II	5
Tracheostomy	PI	I	2
Working knowledge of ventilators and various monitors	PI	I	NA
Interpretation of Arterial Blood gases	PI	I	NA
Correction of Electrolyte disturbances	PI	I	NA
Prescribing Parenteral and Enteral nutrition	PI	I	NA

### d) Emergency Room Procedures

Procedure	Category	Year	Number
Application of Splints for fractures	PI	I	NA
Arterial and venous lines	PI	I	NA
Assessment and initial management of polytrauma	PI	I	NA
Cardiopulmonary Resuscitation	PI	I	NA
Management of Airway obstruction	PI	I	NA
Management of Shock and Cardiac / Respiratory failure	PI	I	NA
Recognition and initial management of surgical emergencies	PI	I	NA
Suturing Techniques	PI	I	NA

### e) Preoperative work up

Procedure	Category	Year	Number
Ability for adequate pre- operative preparation in special situations like diabetes, renal failure, cardiac	PI	I	NA

and respiratory failure etc. and risk Stratification			
Communication skills with special reference to obtaining informed consent	PI	I	NA
Proper pre operative assessment and preparation of patients including DVT prophylaxis, Blood transfusion and antibiotics	PI	I	NA

#### **f) Post operative Care**

Procedure	Category	Year	Number
Airway management	PI	I	NA
Basic Physiotherapy	PI	I	NA
Management of epidural analgesia	PI	I	NA
Management of Fistulae	PI	I	NA
Management of postoperative hypotension and hypertension	PI	I	NA
Post operative pain control	PI	I	NA
Skills for Nutritional rehabilitation of patients	PI	I	NA
Skills for proper Fluid and Antibiotic management	PI	I	NA
Stoma care	PI	I	NA

#### **g) Minor O.T. procedures**

Procedure	Category	Year	Number
Circumcision under local anesthesia	PI	I	5
Drainage of abscess	PI	I	10
FNAC	PI	I	10
Major dressings	PI	I	20
Minor Anorectal procedures (Haemorrhoids – Banding, Cryotherapy, Anal dilatation )	PI	III	10
Minor Biopsies – Lymphnode, ulcer, swellings etc	PI	I	20
Reduction and plaster application of simple fractures and dislocations	PA	II	10
Removal of simple subcutaneous swellings	PI	I	10
Sigmoidoscopy and upper GI endoscopy ( preferable in endoscopy room)	PA/A/O	II	10
Suturing Techniques	PI	I	20
Vastectomy	PI / PA	I	5
Wound debridement	PI	I	10

## h) Major Operating room techniques

Procedure	Category	Year	Number
Instrument arrangement and trolley layout	PA	I	NA
Skills in Sterilization techniques, O.T. Layout and asepsis	O	I	NA
Skin preparation – painting and draping	PI	I	NA
Techniques of scrubbing and gowning	PI	I	NA

## General Surgical Operative Procedures

Procedure	Category	Year	Number
Appendicectomy	PA	I	10
Appendicectomy	PI	III	5
Cholecystectomy	PI ,PA	III	1 , 3
Closure of Colostomy	PA	III	2
Closure of perforated duodenal ulcer / under running bleeding ulcer	PI	III	3
Colostomy	PA	III	2
Cysts and sinuses of the neck	PA	III	2
Diagnostic Laparoscopy	PA	III	3
Drainage of Breast abscess/ Excision of breast lump	PI	I	10
Groin hernia repair	PI	II/ III	5
Gynaecomastia	PA	III	2
Haemorrhoidectomy/ Fistulectomy /Simple fistulectomy	See Minor OT procedures		
Hemicolectomy	PA	III	1
Herniotomy / Orchidopexy in children	PA	III	3
Laparotomy for abdominal trauma/ splenectomy	PI	III	3
Laparotomy for intestinal obstruction /bowel resections/ bowel anastomosis	PI	III	3
Management of complex wounds	PI	I	10
Mastectomy	PA/ A	III	2
Opening and closing the abdomen	PI	I	5
Opening and closing the chest	PI	III/ III	1
Parotidectomy	A	III	2
Release of bands and multiple adhesive obstruction	PI	II	5
Thyroid lobectomy / Thyroidectomy	PA	III	2

UGI Endoscopy	A/O	II /II	10
Ventilation	PI	II	5
Wide excision of breast tumours / Mastectomy / microdocheotomy	PA	III	3
Gastrostomy / feeding jejunostomy	PA	III	3

### Specialty Procedure

There may be repetition of some of the procedures listed under this category and those listed under General surgical procedures. Where different numbers are mentioned for the same / similar procedures between the general surgery and specialty lists, the higher number is applicable as the prescribed number. (Note that the total number is not the sum of the numbers mentioned for the same / similar procedures in the general surgery and specialty lists.)

### Laparoscopy and GI Endoscopy

Procedure	Category	Year	Number
Diagnostic and therapeutic Upper and Lower GI Endoscopy	PA	III	10
Diagnostic Laparoscopy	PA	III	3
Diagnostic Upper GI Endoscopy	PA	III	10
Laparoscopic Cholecystectomy	A	III	3

### Neuro surgery

Procedure	Category	Year	Number
Craniotomy	A	II	2
Management of paraplegia	A	II	2
Peripheral nerve repair	A	II	2
Prevention of nerve injury – specific operations	A	II	2
Suturing complex scalp wounds	PI	II	2
Trephining	PA	II	2

### Urology

Procedure	Category	Year	Number
Catheterization	PI	I	20

Circumcision	PI	I	5
Diagnostic cystoscopy	PA/A	II	3
Inguinal block dissection	PA	II	1
Meatotomy	PI	II	3
Nephrectomy – partial / total	A	II	3
Nephrolithotomy	A	II	3
Orchidectomy	PA / A	II	3
Orchidopexy	A	II	3
Retroperitoneal lymph node dissection	O	II /III	1
Supra pubic Cystostomy	PI	II	3
Total/partial amputation of penis	A	II	1
TURP / Open prostatectomy	A	II	5
Ureterolithotomy	A	II	3
Urethral/ Urogenital injuries	A	II	3
Urethral dilatation	PI	II	5
Varicocele	PA/A	II	3
Vasectomy	PI	I / II / II	10

### Oncology

Procedure	Category	Year	Number
All radical operations – Breast , Thyroid , GI and Facio – maxillary malignancies	A	II	2 EACH
Breast lumpectomy	PI	II	5
Functional neck node dissection	A	II	3
Gastrectomy / Bowel resection	A	II	3
Imprint cytology	PA	II	3
Metastatic workup	PA	II	5
Stoma care	PI	II	5
Thyroid surgery	A	II	5
U/s guided biopsy	A/O	II	3

### Plastic Surgery

Procedure	Category	Year	Number
Burn resuscitation	PI	II	5
Lip surgery	A	II	5
Local blocks in anaesthesia	PI	I	10



Minor hand injuries	PI	II	5
Nerve repair	A	II	2
Post excision reconstruction	A	II	2
Reimplantation of digits	O	II	1
Skin flap surgery	O	II	2
Split skin graft	PI	II	3
Tendon repair	PA	II	2
Wound Debridement	PI	I	10

### Paediatric Surgery

Procedure	Category	Year	Number
Anorectal Anomalies	A	II	2
Circumcision / Meatoplasty	PA	II	10
Herniotomy	PA	II/III	2
Intercostal aspiration	PI	II	2
Laparotomy for peritonitis	PA	II	5
Lymph node biopsy	PI	II/III	5
Non operative treatment of Volvulus	A/ O	II	2
Orchidopexy	PA/A	II	5
Ostomies	PA	II	2
Paediatric emergencies	A/PA	II	10
Pyloromyotomy	PA/A	II/ III	5

### Cardiothoracic surgery

Procedure	Category	Year	Number
Canulation of artery and vein	A	II	2
Chest injuries	PA	II/ III	5
Empyema drainage / decortication	PI	II	2
Endotracheal intubation	PI	I	10
Intercostal drainage	PI	I	5
Lobectomies and pneumonectomies	O	II	2
Oesophageal surgery	O	II/ III	2
Opening and closing the chest	PA	II	2
Pericardiectomy	O	II	2

Removal of FBs	A	II/III	2
Remove pulse generator (pacing)	PA/A	II	1
Rib resection	PA	II/III	2
Tracheostomy	PI	III	5
Sternotomies	PA	II/III	2
Vein and arterial harvesting	PA/A	II/III	2
Ventilator Management	PA	I	10

#### Vascular surgery

Procedure	Category	Year	Number
AV shunts for vascular access	PA	II/III	2
Bypass graft – prosthetic	A	II/III	2
Conservative amputations	PI	II/III	5
Embolectomy	PA	II/III	2
Post traumatic aneurysms	A	II/III	2
Sympathectomy	PA	II/III	2
Use of heparin	PI	II/III	10
Varicose veins surgery	PI	II/III	2
Vascular suturing	PA	II/III	2
Vein graft	A/O	II/III	2
Vein patch repair	A/O	II/III	2

#### Teaching and Learning Activities

A candidate pursuing the course should work in the institution as a full time student. Each year should be taken as a unit for the purpose of calculating attendance.

Every student shall attend teaching and learning activities during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlined is given below. The students shall enter in the Log Book relevant details of all teaching/learning activities.

1. Lectures: Lectures are to be kept to a minimum. Lectures may be didactic or integrated.

Didactic Lectures: Recommended for selected common topics for postgraduate students of all specialties. Few topics are suggested as examples:

Bio-statistics  
Research Methods  
Medical code of Conduct and Medical Ethics  
Communication Skills etc.

These topics may preferably taken up in the first few months of the I<sup>st</sup> year. Few lectures or other type of exposure to human behavior studies shall be taken.

Integrated Lectures: These are recommended to be taken by multidisciplinary teams for selected topics, eg. Jaundice, Diabetes mellitus, Thyroid etc.

Journal Club: Recommended to be held once a month. All the PG students are expected to attend and actively participate in discussion. Further, every candidate must make a presentation from the allotted journal (s), selected articles at least four times a year. The presentations would be evaluated using checklists and would carry weightage for internal assessment (see checklist in Chapter IV).

Subject Seminar: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion. Further, every candidate must present on selected topics at least four times a year and total of 12 seminar presentations in three years. The presentations would be evaluated using checklists and would carry weightage for internal assessment (see checklist in Chapter IV). A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

Student Symposium: Recommended as an optional multi disciplinary Programme. The evaluation may be similar to that described for subject seminar.

Ward Rounds: Ward rounds may be service or teaching rounds.

Service Rounds: Postgraduate students and Interns should do every day for the care of the patients. Newly admitted patients should be worked up by the PGs and presented to the seniors the following day.

Teaching Rounds: Every unit should have grand rounds for teaching purpose. A diary should be maintained for day-to-day activities by the students.

Entries of (a) and (b) should be made in the Log book.

Clinico – Pathological Conference: Recommended once in three months for all post graduate students. Presentation to be done by rotation. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.

7. Inter Departmental Meetings. Strongly recommended particularly with departments of Pathology and Radio-Diagnosis at least once a month. These meetings should be attended by post graduate students and relevant entries must be made in the Log Book.

Pathology: Interesting cases may be chosen and presented by the post graduate students and discussed by them as well as the senior staff of Surgery and Pathology departments.

Radio-diagnosis: Interesting cases and the imaging modalities should be discussed.

Teaching Skills: Postgraduate students must teach under graduate students (Eg.

Medical,Dental,Nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc.

Assessment is made using a checklist by surgery faculty as well students. (See model check in Chapter IV). Record of their participation be kept in Log book. Training of postgraduate students in Educational Science and Technology is recommended.

Continuing Medical Education Programmes (CME): Recommended that at least 2 National/State level CME programmes should be attended by each student in 3 years.

Conferences: Recommended that at least 2 National/State level conferences should be attended by each student in 3 years. The candidates are encouraged to present papers at these conferences/CME

Rotation and posting in other departments

The listed knowledge and skills are to learnt over a period of 3 years. The process is a continuous one. However the recommended period and timing of training in basic subjects, allied department and specialty departments is given below.

In the first year, during the morning session, student should work in the parent department. It is recommended that 2 years and 2 months are spent in general surgery and 10 months in allied and specialty departments. Depending on the time and opportunities available, some of the procedures listed for second year activity can be shifted to the first or third year. Students must be on call on a regular basis. The total duration of postings in core and other specialties will be eight months.

Basic science

Basic science should be an essential part of training. It should be done as concurrent studies during the 1<sup>st</sup> year of training. It is recommended that the candidate spends at least one hour daily, in the afternoons, for the first six months in the respective departments learning basic science relevant to surgery

Topics for study to include anatomy, Physiology, Pathology, Microbiology, Pharmacology, Anaesthesia and Radiology

Pathology: concurrent study – recommend daily grossing sessions, weekly surgical pathology sessions and monthly CPCs.

Radiology: adequate exposure to modern imaging modalities like USG, CT, MRI and angiography

Surgical specialty Subjects

Postings to other specialty departments will be during the second year. The departments and duration of postings are as under:

Department	duration
Paediatric surgery	4 weeks
Plastic surgery	4 weeks
CVTS	4 weeks
Neurosurgery	4 weeks
Urology	4 weeks
Oncology	4 weeks
GI surgery	4 weeks
Orthopaedics including trauma	8 weeks

(Accident and Emergency)

Anesthesia and ICU

4 weeks

#### Dissertation

Every candidate pursuing MS Degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation

The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

Every candidate shall submit to the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 6 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through proper channel.

Such synopsis will be reviewed and the dissertation topic will be registered by the university. No change in the dissertation topic or Guide shall be made without prior approval of the university.

The dissertation should be written under the following headings

Introduction

Aims or objectives of study

Review of literature

Materials and methods

Results

Discussion

Conclusion

Summary

References

Tables

Annexures

The written text of dissertation shall not be less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexures. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the Department and head of the Institution.

Four copies of dissertation thus prepared along with the same matter on CD shall be submitted to the University, six months before final examination on or before the dates notified by the University.

The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is essential precondition for a candidate to appear in the University examination.

For some more details regarding Guide etc., please see Chapter 1 and for books on research methodology, ethics etc., see Chapter IV.

#### Monitoring learning process

It is essential to monitor the learning process of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring to be done by the staff of the department based on participation of students in various teaching/learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Chapter IV.

The learning outcomes to be assessed should include (i) Personal attitude (ii) acquisition of knowledge (iii) Clinical and operative skills (iv) Teaching skills and (v) Dissertation.

i) Personal attitudes. The essential items are

Caring attitude

Initiative

Organizational ability

Potential to cope with stressful situations and undertake responsibility

Trustworthiness and reliability

To understand and communicate intelligibly with patients and others

To behave in a manner which establishes professional relationships with patients and colleagues

Ability to work in team

A critical enquiring approach to acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) Acquisition of Knowledge: The methods used comprise of Log Book which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The logbook should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities. If so, desired.

*Journal Review Meeting (Journal Club):* The ability to do literature search, in depth study. Presentation skills, and use of audio visual aids are to be assessed. The assessment is made by Faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter IV)

*Seminars / Symposia:* The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills

and use of audio visual aids are to be assessed using a checklist (see Model Checklist II, Chapter IV)

*Clinico - pathological conferences:* This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter (s) are to be assessed using a check list similar to that used for seminar.

*Surgical Audit:* Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

iii) Clinical Operative skills

*Day-to-Day work:* Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV).

*Clinical meetings:* Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Chapter IV).

*Clinical and Operative skills:* The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the logbook. (Table No.3, Chapter IV)

iv) Teaching skills: Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Chapter IV)

v) Dissertation in the department: Periodic presentation are to be made in the department. Initially the topic is to be presented before submission to the University for registration, again before finalisation for critical evaluation and another before final submission of the completed work (See Model Checklist VI & VII, Chapter IV)

vi) Periodic tests: The departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

vii) Work diary / Log Book – Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

viii) Records: Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

Log book

The log book is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentation and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1,2 and 3 of Chapter IV. Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and Head of the Department. In extreme cases of default, the departmental committee may recommend that defaulting candidate be withheld from appearing for the examination, if she / he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

#### Scheme of Examination

##### *i) Theory*

There shall be four question papers, each of three hours duration. Each paper shall consist of two long essay questions each question carrying 20 marks and 6 short essay questions each carrying 10 marks. However, one essay question in Paper 1 is recommended to be substituted by 20 MCQs, each carrying 1 mark. Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers. Details of distribution of topics for each paper will be as follows:

Paper I (Course 1 – U15MSG01): basic Sciences- 100 Marks

Anatomy

Physiology

Other basic science topics covered in syllabus

CO1: Application of Basic Science Knowledge in Surgical Skills

CO2: Knowledge of Basic Surgical Principles

CO3: Knowledge of Asepsis and Antisepsis

CO4: Proper theatre etiquette

Introduction to Surgery, Basic Surgical Principles. Wounds, tissue repair and scars. Critical care: fluid, electrolyte and acid-base balance: Blood transfusion. Nutritional support and rehabilitation. Anaesthesia and pain relief. Wound infection. Special infections. Acquired immunodeficiency Syndrome (AIDS). Sterile precautions. Transplantation. Tumours, Cysts, Ulcers, Sinuses. Plastic and reconstructive surgery, Skin lesions. Burns. Arterial disorders. Venous disorders. Lymphatic system. Day surgery. Audit in surgery. Surgical ethics. Basic sciences include anatomy, physiology, biochemistry, microbiology and pathology as found in current textbooks. The stress is on applied anatomy of areas dealt with by surgeons, pathophysiology and surgical pathology.

---



Paper II (Course 2 – U15MSG02): General Surgery, Head, Neck and Thorax

CO1: Ability to manage surgical patients in community.

CO2: To identify surgical diseases in the Head and Neck region and make a clinical diagnosis and plan further management.

CO3: Ability to manage common wounds with various types of dressings, appropriate with the presenting wound and area..

CO4: Acquire surgical Skills to do life saving thoracic surgery procedures.

100 Marks

Eye and orbit. Cleft lip and palate, developmental abnormalities of the face, palate, jaws and teeth. Maxillofacial injuries. Nose and sinuses. Ear. Oral and oropharyngeal cancer and precancer. Salivary gland disorders. Pharynx, larynx and neck. Thyroid gland and the Thyroglossal tract. Parathyroid and Adrenal glands. Breast . Thorax. Heart and pericardium.

Paper III (Course 3 –

U15MSG03) GI Surgery

CO1: To identify and manage common emergency general surgical illnesses, including acute appendicitis and other acute abdominal causes.

CO2: Knowledge about follow up of post operative cases as regards to complications and other management.

CO3: Ability to diagnose and manage chronic abdominal conditions and malignancies of the GI system.

100 Marks

Anastomoses, Oesophagus. Stomach and duodenum. Liver. Spleen . gallbladder and bile ducts. Pancreas. Peritoneum, omentum, mesentery and retroperitoneal space. Small and large intestines. Intestinal obstruction. Vermiform appendix. Rectum. Anus and anal canal. Hernias, Umbilicus, Abdominal wall. Principles of Laparoscopic surgery. Diagnostic Laparotomy,

Management of blunt abdominal injuries

Introduction to NOTES (Natural Orifice Transluminal Endoscopic Surgery)

Paper IV (Course 4 – U15MSG04)

Surgical Specialities and Recent Advances

100 Marks

CO1: Thorough knowledge about recent surgical advances and application of the same with evidence on the patient.

CO2: Clinical diagnosis and management of common surgical diseases like acute/chronic retention of urine, acute vascular emergencies and diseases of other surgical specialties effectively.

CO3: Knowledge of clinical examination and diagnosis of cases which require referral to higher surgical specialties.

Orthopedics: Musculoskeletal disorders. Fracture and dislocations- General, specific. Diseases of bones and joints- infection, tumours, generalized diseases and chronic joint diseases, congenital disorders. Wrist and hand . Foot.

Surgical correction of plexus injuries

Management of open fractures

Post fracture rehabilitation of the patient

Nervous system : Neurological disorders affecting the musculoskeletal system. Spine, vertebral column and spinal cord. Nerves. Cranium (scalp, skull, brain ).

Genito- urinary system: Urinary symptoms, Investigation of the urinary tract, anuria. Kidneys and ureters. Urinary bladder. Prostate seminal vesicles. Urethra and penis. Testis and scrotum.

Paper V: Soft Skills (Elective)U15SSE05

CO1: Communication skills and respect for patients rights and privileges

CO2: Ethical Decision Making regarding surgical procedures

CO3: The ability to conduct a scientific

research CO4: Multitasking and management.

Communication skills and respect for patients rights and privileges . Ethical Decision Making regarding surgical procedure. The ability to conduct a scientific research. Multitasking and management.

Note: The distribution of chapters / topics shown against the papers are suggestive only.

## ii) Clinical

There shall be one long case and two short cases to be examined and presented by each candidate.

Type of cases

Long case 1 100 marks

Short cases 2 (50 x 2) 100 marks

Viva voce

### 1) *Viva voce examination: (80 Marks)*

All examiners will conduct viva voce on all components of course contents. In addition, candidates may be also be given case reports, charts, gross specimens, Histo pathology slides, X-rays, ultrasound, CT scan images, etc., for interpretation. Questions on operative surgery and use of instruments will be asked. It includes discussion on dissertation also.

### 2) *Pedagogy Exercise: (20 Marks)*

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a micro-teaching presentation(for under graduate level) on the topic of 8-10 minutes.

iv)

Maximum marks for M.S Gen. Surgery	Theory 400	Practical 200	Viva 100	Grand Total 700
---------------------------------------	---------------	------------------	-------------	--------------------

Recommended books and Journals

Textbooks

Charles V, Mann, R.C.G. Russell, Norman S. Willians, Bailey and Loves Short Practice of Surgery 24th Edition, Chapman & Hall

David C. Sabiston: Text book of Surgery: The Biological Basis of Modern Surgical Practice, 17th Edition, 1971, W.B. Saunders

Seymour I. Schwarts, G. Tom Shines, Frank C. Spencer, Wendy Cowles Husser: Principles of Surgery, Vol. 1 & 2, 7th Edition, 1999, Mc. Graw Hill

JSP Lumley: Hamilton Baileys Physical Signs, 18th Edition, 1997, Butterworth / Heinemann.

R.W.H.McMinn: Lasts Anatomy: Regional and Applied 10th Edition, 1999, Churchill Livingstone.

Sir Charles Illingworth, Bruce M. Dick, A Text Book of Surgical Pathology, 12th Edition, 1979, Churchill Livingstone.

K.Das: Clinical Methods in Surgery, 8th Edition, 1868, Suhas Kumar Dhar, Calcutta

R.F.Rintoul: Farqharsons Text Book of Operative Surgery, 8th Edition, 1995, Churchill Livingstone

Somen Das: A practical Guide to Operative Surgery, 4th Edition, 1999, S. Das, Calcutta.

Pankaj Patel, V.V.Devoodkar, Handbook of Surgical Instruments for Undergraduates, 1992, Bhalani publishing, House

R.A.Jamieson and A.W.Kay: Textbook of Surgical Physiology, Lavingstone.

James Kyle: Pyes Surgical Handicraft, Indian Edition, K.M. Varghese Company.

Revision- Number / Latest edition + consolidations

Reference text books

William F. Ganong : Review of Medical Physiology, 2000, Lange Medical Publication

Roshan Lall Gupta: Year Book of Surgery, (Series) Jaypee Brothers\

Roshan Lall Gupta : Recent advances in Surgery, (Series) Jaypee Brothers

I.Taylor and C.D. Johnson : Recent Advances in Surgery, (Series) Churchill Livingstone.

Lloyd M. Nyhus, Robert J.Baker and Joseph E. Fischer : Mastery of Surgery Vol. 1 & 2, 3rd Edition, 1997, Little Brown & Company.

Peter J.Morris and Ronald A Malt : Oxford Text Book of Surgery. Vol. 1 & 2, 1994, Oxford University Press  
Charles Rob and Rodney Smith : Operative Surgery (All Volumes). 2nd Edition. 1971, Butterworths.

C.Palanivelu : Art of Laproscopic Surgery .1999 . Paras Publishing

Michael J. Zinner, Seymour I. Schartz and Harold Ellis: Maingot's abdominal operations, Vol. 1& 2, 10th Edition, 1997. Prentice Hall International.

Kevin G. Burnand and Anthony E. Young: The New Aird's companion to surgical studies, 1992, Churchill Livingstone.

Guyton: Text Book of Medical Physiology .9th Edition, 1998, W.B. Saunders.

Hamilton Bailey: Emergency Surgery, 1999, Butterworth

Cuschieri: Essentials of Surgical Practice, 3rd Edition, 19954, K.M. Verghese Company

Goliger: Surgery of the Anus, Ractum and Colon

Oxford text book of surgery

Lee Mcgregor: Synopsis of Surgical Anatomy, 12th (Indian) Edition, 1998, K.M. Verghese Company

W.T Irvine: Modem Trends in Surgery, Series, Butterworths

#### Reference books

Irving Taylor, Timothy G. Cooke and Perra Guillou: Essential General Surgical Oncology, 1996, Churchil Livingstone.

James A, O'Neil, Maro I. Owe. Jay L, Grosfeld, Eric W. Fopnkalsrud and Arnold G. Coran: Pediatric Surgery, Vol. 1 & 2, 5th Edition, 1998, Mosby

Anthony S Fauci and Ouners Haririson's Principles of Internal Medicine. Vol. 1 & 2. 14th Edition, 1998, Mc Graw Hill

Sheila Sherlock and James Dooley: Diseases of the Liver and Biliary System, 10th Edition, 2000, Blackwell Scientific Publication

Incent J. Devita, Samuel Hellman and Steven A. Roseburg, Cancer: Principles and Practice of Oncology, 6th Edition, 2000, Lippincott

Blumgart: Surgery of Liver & Biliary Tract, Vol. 1 & 2, 2nd Edition, 1994, Churchill Livingstone

Campbell and Smith : Urology, Vol. 1,2 & 3, 5th Edition, 1986, W.B. Saunders

Smith : General Urology

Grab and Smith : Plastic Surgery, 5th Edition, 1997

#### Journals for reference

- Indian Journal of Surgery
- British Journal of Surgery
- American Journal of Surgery
- Surgery International
- New England Journal of Medicine
- Surgery, Gynecology & Obstetrics
- Year Book of Surgery
- Surgical Clinics of North America
- Lancet
- British Medical Journal
- Urological Clinics of North America
- Indian Journal of Medical Research

#### Additional reading

Compendium of Recommendations of Various Committees on Health and Development (1943-1975) DGHS, 1985 Central Bureau of Health Intelligence, Directorate General of Health Services, Min. Of Health and Family Welfare, Govt. Of India, Nariman Bhawan, New Delhi, P – 335

National Health Policy: Min. Of Health & Family Welfare, Nirman Bhawan New Delhi, 1983

Samosh Kumar: The Elements

Srinivasa D K et al: Medical Education Principles and Practice, 1995. National Teacher Training Centre, JIPMER, Pondicherry

Indian Council of Medical Research: Policy Statement of Ethical considerations involved in Research on Human Subjects, 1982, I.C.M.R., New Delhi

Code of Medical Ethics framed under section 33 of the Indian Medical Council Act, 1956.  
Medical Council of India, Kotla Road, New Delhi

Francis CM: Medical Ethics, Jaypee Publications, Bangalore, 1993.

Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.

Internal National Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journal, N Engl J Med 1991, 424-8

Kirkwood B.R.: Essentials of Medical Statistic, 1st Ed., Oxford, Blackwell Scientific Publications 1988.

Mahajan B.K.: Methods in Bio – statistics for Medical Students, 5th Edition, New Delhi, Jaypee Brothers Medical Publishers, 1989.

Raveendran B Gitanjali: A Practical approach to PG dissertation, New Delhi, Jaypee Publications, 1998.

R.K. Chaube: Consumer Protection Act and Medical Profession, 1st Edition, 1999, Jaypee Brother

Model checklist for Assessment of Scientific papers for publications

Sl.No	Criteria	Distribution of marks	Marks awarded
1	Originality	10	
2	Clarity and quality of presentation	10	
3	Relevance	10	
4	Review of literature	10	
5	Quantum of works involved	15	
6	Methodology, sensitivity, sample size, controlled, not controlled study etc	25	
7	Advancement in knowledge	10	
	Total	90	

## Chapter IV

### Monitoring Learning progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is to be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Model checklists are given in this chapter which may be copied and used.

The learning outcomes to be assessed should include: (i) Personal Attitudes,(ii) Acquisition of Knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

i) Personal Attitudes. The essential items are:

Caring attitudes

Initiative

Organisational ability

Potential to cope with stressful situations and undertake responsibility

To understand and communicate intelligibly with patients and others

To behave in a manner which establishes professional relationships with patients and colleagues

Ability to work in team

A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) Acquisition of Knowledge: The methods used comprise of Log Book which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The logbook should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities if so desired.

*Journal Review Meeting (Journal Club):* The ability to do literature search, in depth study. Presentation skills, and use of audio visual aids are to be assessed. The assessment is made

by Faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter IV)

*Seminars / Symposia:* The topics should be assigned to the student well in advance to facilitate in-depth study. The ability to do literature search, presentation skills and use of audio visual aids are to be assessed using a checklist (see Model Checklist II, Chapter IV)

*Clinico - pathological conferences:* This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter (s) are to be assessed using a check list similar to that used for seminar.

*Medical Audit:* Periodic morbidity and mortality meetings are to be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

iii) Clinical skills

*Day-to-Day work:* Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV).

*Clinical meetings:* Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist IV, Chapter IV).

*Clinical and procedural skills:* The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the logbook. (Table No.3, Chapter I

iv) Teaching skills: Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist V, Chapter IV)

v) Periodic tests: The departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. In case of diploma courses of two-year duration, the departments may conduct two tests. One of them at the end of first year and the other in the second year three months before the final examination. The tests may include written papers, practicals/clinicals and viva voce.

vi) *Work diary / Log Book* – Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

vii) Records: Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.



The log book is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentation and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1,2 and 3 of Chapter IV. Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she / he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

#### CHAPTER IV (CONTD.)

##### Format of Model Check Lists

##### Check List – I MODEL CHECK LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student:		Name of the Faculty / Observer:				Date
	Items for observation during presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1.	Article chosen was					
2.	Extent of understanding of scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper/subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					

9.	Any other observation					
	Total Score					

Check List – II

MODEL CHECK LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the Student:

Name of the Faculty / Observer:

Date

	Items for observation during presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1.	Whether other relevant publications consulted					
2.	Whether cross reference have been consulted					
3.	Completeness of Preparation					
4.	Clarity of presentation					
5.	Understanding of subjects					
6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio – Visual aids					
9.	Overall performance					
10.	Any other observation					
	Total Score					

Check List – III

MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN WARD/ OPD

(To be completed once a month by respective Unit Heads including posting in other departments)

Name of the Student:

Name of the Unit head :

Date

Sl No	Points to be considered	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Bedside manners					
8.	Rapport with patients					
9.	Counseling patients relatives for blood donation or Post mortem and Case follow up					
10	Over all quality of Ward work					
11.	Total Score					

Check List – IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student:

Name of the Faculty:

Date

Sl No	Points to be considered	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1.	Completeness of history					
2.	Whether all relevant point elicited					

3.	Clarity of presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of General physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
10	Investigations required Complete list					
	Relevant order					
	Interpretation of investigations					
11.	Ability to react questioning Whether it follows logically from history and findings					
12	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14	Others					
	Grand Total					

Check List – V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACICE

Name of the Student:

Name of the Faculty:

Date

Sl No		Strong Point	Weak Point
1.	Communication of the purpose of the talk		

2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples and /or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10	Answers questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses A V aids appropriately		

Check List – VI

MODEL CHECK LIST FOR DISSERTATION PRESENTATIONS

Name of the Student:

Name of the Faculty:

Date

Sl No	Points to be considered	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1.	Interest shown in selecting a topic					
2.	Appropriate review of literature					
3.	Discussion with guide and other faculty					
4.	Quality of protocol					
5.	Preparation of proforma					
	Total Score					

Check List – VII

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE / CO – GUIDE

Name of the Student:

Name of the Faculty:

Date

Sl No	Items for observation during presentations	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1.	Periodic consultation with guide / co-guide					
2.	Regular collection of case material					
3.	Depth of analysis / discussion					
4.	Departmental presentation of findings					
5.	Quality of final output					
6.	Others					
	Total Score					

LOG BOOK

Table – 1: Academic activities attended

Name:

Admission Year:

College:

Date	Type of Activity Specify Seminar, Journal Club, Presentation, UG Teaching	Particulars







- \* Key      O - Washed up and observed
- A - Assisted a more senior Surgeon
- PA –Performed procedure under the direct supervision of a senior surgeon
- PI – performed independently

Model Overall Assessment Sheet

Name of the college:

Academic Year

Sl. No	Faculty Member & Others	Name of Student and Mean Score									
		A	B	C	D	E	F	G	H	I	J
1											
2											
3											
4											
5											
6											
Total Score											

Note: Use separate sheet for each year