



RAVARA INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)

Loni, Tal. Rahata, Dist. Ahmednagar 413736

NAAC Re-accredited with 'A' Grade

SYLLABUS

PG Programme- MS (GENERALSURGERY)

(As per MCI Regulations Governing PG Programme 2000 Amended up to May, 2018)

I. PREAMBLE

The purpose of PG education is to create specialists who would provide high quality health care and advance the cause of science through research & training.

II. SUBJECT SPECIFIC LEARNING OBJECTIVES

Clinical Objectives

At the end of postgraduate training, the PG student should be able to: -

1. diagnose and appropriately manage common surgical ailments in a given situation.
2. provide adequate preoperative, post-operative and follow-up care of surgical patients.
3. identify situations calling for urgent or early surgical intervention and refer at the optimum time to the appropriate centers.
4. counsel and guide patients and relatives regarding need, implications and problems of surgery in the individual patient.
5. provide and coordinate emergency resuscitative measures in acute surgical situations including trauma.
6. organize and conduct relief measures in situations of mass disaster including triage.
7. effectively participate in the National Health Programs especially in the Family Welfare Programs.
8. discharge effectively medico-legal and ethical responsibilities and practice his specialty ethically.
9. must learn to minimize medical errors.
10. must update knowledge in recent advances and newer techniques in the management of the patients.
11. must learn to obtain informed consent before performing operative procedures.
12. perform surgical audit on a regular basis and maintain records (manual and/or electronic) for life.
13. participate regularly in departmental academic activities by presenting Seminar, Case discussion, Journal Club and Group discussion for topic on weekly basis and maintain logbook.
14. demonstrate sufficient understanding of basic sciences related to his specialty.
15. plan and advise measures for the prevention and rehabilitation of patients belonging to his specialty.

Research:

The student should:

1. know the basic concepts of research methodology, plan a research project and know how to consult library.
2. should have basic knowledge of statistics.

Teaching:

The student should learn the basic methodology of teaching and develop competence in teaching medical/undergraduate/interns and paramedical students.

Professionalism:

1. The student will show integrity, accountability, respect, compassion, empathy and dedicated patient care. The student will demonstrate a commitment to excellence and continuous professional development.
2. The student should demonstrate a commitment to ethical principles relating to providing patient care, confidentiality of patient information and informed consent.
3. The student should show sensitivity and responsiveness to patients' culture, age, gender and disabilities.

III. SUBJECT SPECIFIC COMPETENCIES

By the end of the course, the student should have acquired knowledge (cognitive domain), professionalism (affective domain) and skills (psychomotor domain) as given below:

A. Cognitive domain

- Demonstrate knowledge of applied aspects of basic sciences like applied anatomy, physiology, biochemistry, pathology, microbiology and pharmacology.
- Demonstrate knowledge of the bedside procedures and latest diagnostics and therapeutics available.
- Describe aetiology, patho-physiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children.
- Demonstrate the theoretical knowledge of general principles of surgery.
- Demonstrate the theoretical knowledge of systemic surgery including disaster management and recent advances.
- Demonstrate the theoretical knowledge with updates to choose, and interpret appropriate diagnostic and therapeutic imaging including ultrasound, Mammogram, CT scan, MRI.
- Demonstrate the knowledge of ethics, medico-legal aspects, communication skills and leadership skills. The PG student should be able to provide professional services with empathy and humane approach.

B. Affective domain

- Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
- Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.

- Develop communication skills to word reports, obtain a proper relevant history and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.
- Obtain prior informed consent for any examination/procedure and explain to the patient and attendants the disease and its prognosis with a humane approach.
- Provide appropriate care that is ethical, compassionate, responsive and cost effective and in conformation with statutory rules.

C. Psychomotor domain

- Perform a humane and thorough clinical examination including internal examinations and examinations of all organs/systems in adults and children
- Write a complete case record with all necessary details.
- Arrive at a logical working diagnosis / differential diagnosis after clinical examination.
- Order appropriate investigations keeping in mind their relevance (need based).
- Choose, perform and interpret appropriate imaging in trauma - ultrasound FAST (Focused Abdominal Sonography in Trauma).
- Perform minor operative procedures and common general surgical operations independently and the major procedures under guidance.
- Provide basic and advanced life support services in emergency situations
- Provide required immediate treatment and comprehensive treatment taking the help of specialist as required.
- Perform minimally invasive surgery in appropriate clinical settings. Must have undergone basic training in operative laparoscopy related to general and GI Surgery.
- Undertake complete patient monitoring including the preoperative and post-operative care of the patient.
- Write a proper discharge summary with all relevant information.

IV. Syllabus

Duration of Course:

Three Academic years (Six Academic terms)

Each Academic term shall mean six months training period

Course Contents:

No limit can be fixed and no fixed number of topics can be prescribed as course contents. She/he is expected to know the subject in depth; however, emphasis should be on the diseases/health problems most prevalent in that area. Knowledge of recent advances and basic sciences as applicable to his/her specialty should get high priority. Competence in surgical skills commensurate with the specialty (actual hands – on training) must be ensured.

A student should have fair knowledge of **Basic sciences (Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology)** as applied to his specialty. Further, the student should acquire in-depth knowledge of his subject including recent advances and should be fully conversant with the bedside procedures(diagnostic and therapeutic) and having knowledge of latest diagnostics and therapeutics available.

1. General topics:

1. History of medicine with special reference to ancient Indian texts
2. Health economics - basic terms, health insurance
3. Medical sociology, doctor-patient relationship, family adjustments in disease, organizational behavior, conflict resolution
4. Computers - record keeping, computer aided learning, virtual reality, robotics
5. Hazards in hospital and protection: AIDS, hepatitis B, tuberculosis, radiation, psychological
6. Environment protection - bio-medical waste management
7. Surgical audit, evidence based surgical practice, quality assurance
8. Concept of essential drugs and rational use of drugs
9. Procurement of stores and material & personal management
10. Research methodology - library consultation, formulating research, selection of topic, writing thesis protocol, preparation of consent form from patients
11. Bio-medical statistics, clinical trials
12. Medical ethics
13. Consumer protection
14. Newer antibiotics
15. Problem of resistance.
16. Sepsis - SIRS
17. Nosocomial infection
18. Advances in imaging technologies
19. Disaster management, mass casualties, Triage
20. O.T. design, technologies, equipment
21. Critical care in surgical practice
22. Response to trauma
23. Wound healing
24. Fluid and electrolyte balance
25. Nutrition
26. Blood transfusion
27. Brain death
28. Cadaveric organ retrieval

2. Systemic Surgery

The student must acquire knowledge in the following important topics, but teaching should not be limited to these topics. A standard text-book may be followed, which will also identify the level of learning expected of the trainees.

General Surgery

- Wound healing including recent advances
- Asepsis, antisepsis, sterilization and universal precaution
- Surgical knots, sutures, drains, bandages and splints
- Surgical infections, causes of infections, prevention
- Common aerobic and anaerobic organisms and newer organisms causing infection including *Helicobacter Pylori*
- Tetanus, gas gangrene treatment & prevention
- Chronic specific infections TB, Filariasis
- Boils, cellulites, abscess, necrotizing fascitis and synergistic infection
- Antibiotic therapy rationale including antibiotic prophylaxis, misuse, abuse
- Hospital acquired nosocomial infection causes and prevention including MRSA etc.

- HIV, AIDS and Hepatitis B & C, Universal precautions when dealing with patients suffering from these diseases
- Fluid and electrolyte balance including acid – base disturbance, consequences, interpretation of blood gas analysis data and management
- Rhabdomyolysis and prevention of renal failure
- Shock (septicemic, hypovolaemic, Neurogenic, anaphylactic), etiology, pathophysiology and management
- Blood and blood components, transfusion indication, contraindication, mismatch and prevention and management of complications of massive blood transfusion
- Common preoperative preparation (detailed preoperative workup, risk assessment according to the disease and general condition of the patient as per ASA grade) and detailed postoperative complications following major and minor surgical procedures
- Surgical aspects of diabetes mellitus particularly management of diabetic foot and gangrene, preoperative control of diabetes, consequences of hypo- and hyperglycemia in a postoperative setting
- Consequences and management of bites and stings including snake, dog, human bites
- Mechanisms and management of missile, blast and gunshot injuries
- Organ transplantation: Basic principles including cadaver donation, related Human Organ Transplant Acts, ethical and medicolegal aspects.
- Nutritional support to surgical patients
- Common skin and subcutaneous condition
- Sinus and fistulae, pressure sores

Arterial Diseases

- Acute arterial occlusion, diagnosis and initiate management
- Types of gangrene, Burger's disease and atherosclerosis
- Investigations in case of arterial obstruction, amputation, vascular injuries: basic principles and management

Venous and Lymphatic Diseases

- Venous disorders: Varicose veins
- Diagnosis, principles of therapy, prevention of DVT: basic principles and management
- Lymphatic: Diagnosis and principles of management of lymphangitis and lymphedema
- Surgical management of Filariasis

Burns and Reconstruction

- Burns: causes, prevention and management
- Wounds of scalp and its management

Head / Neck / Face

- Recognition, diagnosis and monitoring of patients with head injury, Glasgow coma scale
- Undergo advanced trauma and cardiac support course (certified) before appearing in final examination
- Recognition of acute cerebral compression, indication for referrals.
- Cleft lip and palate
- Leukoplakia, retention cysts, ulcers of tongue
- Oral malignancies
- Salivary gland neoplasms
- Branchial cyst, cystic hygroma

- Cervical lymphadenitis nonspecific and tuberculous, metastatic lymph nodes and lymphomas.
- Diagnosis and principles of management of goiter
- Thyroglossal cyst and fistula
- Thyrotoxicosis
- Thyroid neoplasms
- Management of solitary thyroid nodule
- Thoracic outlet syndrome

Diseases of Breast

- Management of nipple discharge
- Breast abscess
- Clinical breast examination, breast self-examination
- Screening and investigation of breast lump
- Concept of Single Stop Breast Clinic
- Cancer breast diagnosis, staging and multimodality management (common neoadjuvant and adjuvant and palliative chemotherapy protocols and indications of radiation and hormonal therapy, pathology and interpretation of Tumour Markers, breast cancer support groups and counseling)

Thorax

- Recognition and treatment of pneumothorax, haemothorax
- Pulmonary embolism: Index of suspicion, prevention/recognition and treatment
- Flail chest, stove in chest
- Postoperative pulmonary complication
- Empyema thoracis
- Recognition of oesophageal atresia and principles of management
- Neoplasms of the lung including its prevention by tobacco control

Hepatobiliary/Pancreatic/Splenic Surgery

- Signs and tests of liver dysfunction
- Amoebic liver abscess and its non-operative management
- Hydatid cyst and its medical and surgical management including laparoscopic management
- Portal hypertension, index of suspicion, symptoms and signs of liver failure and timely referral to a specialist center
- Obstructive jaundice with emphasis on differentiating medical vs surgical Jaundice, algorithm of investigation, diagnosis and surgical treatment options
- Neoplasms of liver
- Rupture spleen
- Indications for splenectomy
- Clinical features, diagnosis, complications and principles of management of cholelithiasis and cholecystitis including laparoscopic cholecystectomy
- Management of bile duct stones including endoscopic, open and laparoscopic management
- Carcinoma gall bladder, incidental cancer gallbladder, index of suspicion and its staging and principles of management
- Choledochal cyst
- Acute pancreatitis both due to gallstones and alcohol
- Chronic pancreatitis
- Carcinoma pancreas

Abdomen / Alimentary Canal**Esophagus/Stomach**

- Cancer oesophagus: principles of management including importance of early detection and timely referral to specialist
- Achalasia cardia
- Gastro-esophageal reflux disease (GERD)
- Congenital hypertrophic pyloric stenosis
- Aetiopathogenesis, diagnosis and management of peptic ulcer including role of H. Pylori and its diagnosis and eradication
- Cancer stomach
- Peritonitis: causes, recognition, diagnosis, complications and principles of management with knowledge of typhoid perforation, tuberculous peritonitis, postoperative peritonitis
- Abdominal pain types and causes with emphasis on diagnosing early intraabdominal acute pathology requiring surgical intervention
- Intestinal amoebiasis and other worms manifestation (Ascariasis) and their surgical complications (Intestinal Obstruction, perforation, gastrointestinal bleeding, involvement of biliary tract)
- Abdominal tuberculosis both peritoneal and intestinal
- Intestinal obstruction

Appendix

- Diagnosis and management of acute appendicitis
- Appendicular lump and abscess

Colon

- Congenital disorders, Congenital megacolon
- Colitis infective / non infective
- Inflammatory bowel diseases
- Premalignant conditions of large bowel
- Ulcerative colitis
- Carcinoma colon
- Principles of management of types of colostomy

Rectum and Anal Canal:

- Congenital disorders, Anorectal anomalies
- Prolapse of rectum
- Carcinoma rectum
- Anal Canal: surgical anatomy, features and management of fissures, fistula - in – ano.
- Perianal and ischiorectal abscess
- Haemorrhoids – Non-operative outpatient procedures for the control of bleeding (Banding, cryotherapy, injection) operative options - open and closed haemorrhoidectomy and stapled haemorrhoidectomy
- Anal carcinoma

Hernia

- Clinical features, diagnosis, complication and principles of management of inguinal hernia including laparoscopic repair
- Umbilical, femoral hernia and epigastric hernia
- Open and Laparoscopic repair of incisional/primary ventral hernia

Urogenital Surgery

- Urinary symptoms and investigations of urinary tract
- Diagnosis and principles of management of urolithiasis
- Lower Urinary tract symptoms or prostatism

- Benign prostatic hyperplasia; diagnosis and management
- Genital tuberculosis in male
- Phimosis and paraphimosis
- Carcinoma penis
- Diagnosis and principles of treatment of undescended testis
- Torsion testis
- Hydrocele, haematocele and pyocele/Varicocele: Diagnosis (Medical Board for fitness)
- Acute and chronic epididymo-orchitis
- Testicular tumours
- Principles of management of urethral injuries

Others

- Management of soft tissue sarcoma
- Prosthetic materials used in surgical practice
- Telemedicine, tele proctoring and e-learning
- Communication skills

A student should be expert in good history taking, physical examination, providing basic life support and advanced cardiac life support, common procedures like FNAC, Biopsy, Aspiration from serous cavities, lumbar puncture etc. The student should be able to choose the required investigations.

Clinical cases and Symptoms-based approach to the patient with:

1. Ulcers / Subcutaneous Swellings / Neck Swellings
2. Ulcers in oral cavity / Oral malignancy
3. Solitary nodule / Goiters of the thyroid / Thyroid Malignancy
4. Lymph node in the neck/Lymphoma & Lymphatic diseases
5. Suspected breast lump / Benign breast disease / Cancer of Breast
6. Acute abdominal pain
7. Blunt Trauma Abdomen
8. Gall stone disease
9. Dysphagia
10. Chronic abdominal pain
11. Epigastric mass
12. Right hypochondrium mass
13. Right iliac fossa mass
14. Pancreatic mass
15. Scrotal / Inguino-scrotal swelling / Hernia
16. Ventral Hernia / Incisional Hernia
17. Gastric outlet obstruction
18. Upper gastrointestinal bleeding
19. Lower gastrointestinal bleeding
20. Anorectal symptoms
21. Acute intestinal obstruction
22. Obstructive jaundice / HCC
23. Acute retention of Urine
24. Bladder outlet obstruction
25. Hematuria
26. Peripheral vascular disease / Diabetic Foot
27. Venous Disorders / Varicose veins

28. New born with developmental anomalies
29. Hydronephrosis, Pyonephrosis, Perinephric abscess
30. Renal tuberculosis
31. Renal tumors / Renal Mass
32. Carcinoma prostate / Testis
33. Genital tuberculosis / Malignancies in male

At the end of course, post graduate students should be able to perform the following procedures independently, including perioperative management (Psychomotor Skills):

Minor Procedures -

- Start IV lines and monitor infusions
- Start and monitor blood transfusion
- Venous cut-down
- Start and manage a C.V.P. line
- Conduct CPR (Cardiopulmonary resuscitation)
- Basic/ advance life support
- Endotracheal intubation
- Insert nasogastric tube
- Proctoscopy
- Urethral catheterisation
- Surgical management of wounds
- Biopsies including image guided
- Manage pneumothorax / pleural space collections
- Infiltration, surface and digital Nerve blocks
- Incise and drain superficial abscesses
- Control external hemorrhage
- Vasectomy (Preferably non-scalpel)
- Circumcision

Major Procedures -

- Surgery for hydrocele
- Surgery for hernia
- Surgery and Injection or banding of piles / Fistulectomy
- Management of all types of shock
- Assessment and management of burns
- Hemithyroidectomy
- Excision of thyroglossal cyst
- Excision Biopsy of Cervical Lymph node
- Excision of benign breast lump
- Modified Radical mastectomy
- Axillary Lymph node Biopsy
- Excision of gynecomastia
- Excision of skin and subcutaneous swellings
- Split thickness skin graft
- Management of hernias
- Laparoscopic and open cholecystectomy
- Management of Liver abscess
- Appendectomy

- Management of intestinal obstruction, small bowel resection, perforation and anastomosis
- Colostomy / Ileostomy / Feeding Gastrostomy & Jejunostomy

The student must have observed or assisted in the following major surgical procedures:

- Hartmann's procedure/Colectomy/APR for cancer rectum
- Splenectomy (emergency)
- Stomach/Duodenal perforation, Large Gut Obstruction, Mesenteric Ischemia & Gangrene of Intestine
- Partial/Total Gastrectomy
- Major Thyroid Surgery
- Varicose Vein surgery/EVLA
- Craniotomy (Head Injury)
- Superficial parotidectomy / Submandibular gland excision
- Soft tissue tumours including sarcoma
- Pancreatic surgery / Pancreaticoduodenal resection(Whipple's)
- Hydatid cyst liver
- Retroperitoneal operations

V. TEACHING AND LEARNING METHODS

Teaching methodology

Didactic lectures are of least importance; small group discussion such as seminars, journal clubs, symposia, reviews and guest lectures should get priority for theoretical knowledge. Bedside teaching, grand rounds, structured interactive group discussions and clinical demonstrations should be the hallmark of clinical/practical learning with appropriate emphasis on e-learning. Student should have hand-on training in performing various procedures and ability to interpret various tests/investigations. Exposure to newer specialized diagnostic/therapeutic procedures concerning her/his subject should be given.

Self-learning tools like assignments and case-based learning may be promoted. Following T-L methods can be incorporated and integrated for blended clinical case-based learning- OMP/SNAPPS/DOPS/DOAP/PBL.

Every postgraduate student must complete and get certified with PG orientation/Research methodology/ACLS/BLS workshops after joining the course.

1. Clinical postings

A major portion of posting should be in General Surgery. It should include inpatients, out-patients, ICU, trauma, emergency room and specialty clinics.

Rotation of posting

- Inter-unit rotation in the department should be done for a period of up to one year.
- Rotation in appropriate related subspecialties for a total period not exceeding 06 months.

During third/fourth term-

- Plastic Surgery and Burns
- Neurosurgery

- Uro surgery/Endourology
- Paediatric Surgery
- Casualty/Trauma
- Surgical ICU/Anesthesia
- Any other specialty in surgery

2. Clinical meetings:

There should be intra- and inter- departmental meetings for discussing the uncommon/interesting cases involving multiple departments.

3. Log book:

Each student must be asked to present a specified number of cases for clinical discussion, perform procedures/tests/operations/present seminars/review articles from various journals in inter-unit/inter departmental teaching sessions. They should be entered in a Log Book. The Log books shall be checked and assessed periodically by the faculty members imparting the training.

4. Thesis writing and research: Thesis writing is compulsory. Research Methodology workshop is compulsory for every postgraduate student followed by submission of Thesis synopsis (After Ethical committee clearance) to research cell before starting thesis work.

5. A postgraduate student of a postgraduate degree course in broad specialties/super specialties would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication (Preferably in Indexed Journal) during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.

6. The student should know the basic concepts of research methodology, plan a research project, be able to retrieve information from the library. The student should have a basic knowledge of statistics.

7. The postgraduate students shall be required to participate in the teaching and training program of undergraduate students and interns.

8. Department should encourage e-learning activities.

During the training program, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently.

Provision of Surgical Skills Laboratories is mandatory

Viz- Laparoscopy training models

Laparoscopy Simulators

Models for training of IV procedures/suturing skills

(Arm/Thigh/Suturing boards etc.)

PG learning activity schedule:

1. Didactic Lectures- At least 2 per month mainly focusing on general topics
2. Guest Lectures- Minimum 6 per year. The speaker persons should be from outside college.
3. CPC meeting- Should be held Quarterly
4. Clinical Society meeting/Death meeting- Should be held Quarterly. Attendance must be made compulsory as and when the department is involved in discussion.
5. Group discussion- 1 per week

6. Microteaching (Micro clinic)- 1 per week
7. Journal Club- 1 per week
8. Seminar / Symposium- 1 per month
9. Case presentation- 1 per week
10. Grand PG round- 1 per week

(ANNEXURE I & II)

VI. ASSESSMENT

Objectives:

1. To assess whether the PG student have acquired the desired competencies as mentioned in the specific learning objectives in the context of Cognitive, Psychomotor and Affective domains
2. To assess the quality assurance of the competencies acquired by the PG student

Assessment should be:

1. Comprehensive & objective, addressing the stated competencies of the course
2. Need based and spread over the duration of the course covering all domains, professionalism and communication skills
3. Processed to help in generation of authentic feedback around 360 degree

It is desirable to increase the number of assessors/assessments/tasks and involvement of all faculty of department.

The Internal Assessment should be conducted in theory and clinical examination at the end of first & second academic year. At the end of course preliminary examination in theory & clinical (Practical) should be conducted before final university examination.

Blueprinting may be required to decide which competencies should be assessed during Internal Assessment and which should go to Summative Assessment.

(ANNEXURE VIII)

FORMATIVE ASSESSMENT, i.e., assessment during the training would include: Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.

Quarterly assessment during the MS training should be based on following educational activities:

- 1. Journal based / recent advances learning:**
 - Journal Club
 - Seminar
 - Symposia
- 2. Patient based /Laboratory or Skill based learning:**
 - Case Presentations/Clinical Demonstrations
 - Ward Rounds
 - Grand Rounds
 - Structured Interactive Group Discussions
 - Microteachings
- 3. Self-directed learning and teaching**
 - Operative & Assistance
 - UG Teaching

Communication/Counseling
 Role Playing/Audiovisual Taping
 Clinical Tasks & Assignments
 e-Learning/Library Resources

4. Departmental and interdepartmental learning activity:

Hands on Trainings/Workshops
 CME-Departmental/Interdepartmental
 Guest Lectures
 Integrated Teaching/CPC/Death Meetings

5. External and Outreach Activities / CMEs

Participation and Presentations in CME/Conference
 Participation in Institutional programs like-
 Diagnostic Camps
 Namaste Doctors
 Community Activities

The Student to be assessed at the end of every term (6 Months) for the following categories: -

1. Thesis / Research Work

Term wise progress report on thesis to be submitted by student after being assessed and duly signed by Guide and HOD
 Assessment of Research- (Certificates to be submitted)
 Research work shop (Compulsory)
 Paper/Poster presentation
 Publications (Preferably in Indexed Journals)

2. Log Book Maintenance

To be checked and assessed by Faculty member duly signed and certified by HOD

The student to be assessed periodically as per categories listed in post graduate student appraisal form (Annexure III & IV)

SUMMATIVE ASSESSMENT i.e. Assessment at the end of training:

The summative examination would be carried out as per the Rules given in *POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000*.
(ANNEXURE V & VI)

The examination will be in three parts:

1. Thesis

Every post graduate student shall carry out work on an assigned research project under the guidance of a recognized Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis. Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the candidate to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature.

Thesis shall be submitted at least six months before the Theory and Clinical /Practical examination. The thesis shall be examined by a minimum of three

examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A candidate shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners.

2. **Theory Examination:**

The examinations shall be organized on the basis of 'Marking system' to evaluate and to certify candidate's level of knowledge, skill and competence at the end of the training. Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical' separately shall be mandatory for passing examination as a whole. The examination for MS shall be held at the end of 3rd academic year. An academic term shall mean six month's training period (Total 6 terms).

Theory shall consist of four papers of 3 hours duration each.

Paper I: Basic Sciences

Applied Embryology and Anatomy, Physiology, Pathology, pharmacology, Biochemistry related to Surgery

Paper II: Principles and Practice of Surgery

Topics included in Course contents:

General Topics- Sr No 1 to 28

Topics included in Systemic Surgery under heading of General Surgery

Paper III: Principles and practice of Operative Surgery

Topics included in Systemic Surgery under following headings:

Arterial/Venous and Lymphatic diseases

Burn & Reconstruction, Head/Neck/Face, Breast, Thorax

Hepatobiliary/Pancreatic/Splenic Surgery

Abdomen (Alimentary canal), Hernia

Urogenital Surgery, Others

Paper IV: Recent Advances in Surgery

Diagnostic and Therapeutic advances including recent/latest

Pattern of Marks Distribution each Theory Paper: **TOTAL 100 Marks**
(ANNEXURE VII)

3. **Clinical / Practical and viva voce Examination**

Clinical examination shall be conducted to test the knowledge, skills, attitude and competence of the post graduate students for undertaking independent work as a specialist/Teacher, for which post graduate students shall examine a minimum one long case and two short cases.

The Oral examination shall be thorough and shall aim at assessing the post graduate student's knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the specialty, which form a part of the examination.

Assessment may include Objective structured clinical examination (OSCE), Oral/Viva-voce examination needs to assess knowledge on X-rays, Pathology, investigations, drugs, instrumentation, operative procedures. Due weight age should be given to Log Book Records and day to-day observation during the training.

Mark distribution for Clinical/Practical Examination: TOTAL 400 MARKS
(ANNEXURE IX)

Annexure IX

PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED TO BE UNIVERSITY)

MARKS LIST FOR PRACTICAL AND VIVA

Post Graduate Degree Practical Examination

Summer/Winter: _____

Center: - _____

Date: - _____

Course: MS (General Surgery)

Max. Marks: -400

Seat No	Clinical Marks 300 Marks					Table Viva 100 Marks				Total 400 Marks
	Long Case (1) 120 Marks	Short Cases (2x60) 120 Marks		Ward Round (2x15) 30 Marks	OSCE (3x10) 30 Marks	Pathology 30 Marks	X-ray & Investigations, Drugs, 30 Marks	Instrument & Operation 30 Marks	Logbook 10 Marks	
		(1)	(2)							

External/Internal Examiners:

Name: _____

Name: _____

Signature: _____

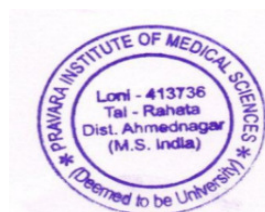
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