

**Program of MS Plastic Surgery**

**At**

**Rawalpindi Medical University**

**Rawalpindi**

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# **SECTION – I**

## **MISSION STATEMENT**

The mission of MS Plastic Surgery Program of Rawalpindi Medical University is:

1. To provide exemplary care, treating all patients who come before us with uncompromising dedication and skill.
2. To set and pursue the highest goals for ourselves as we learn the science, craft, and art of surgery.
3. To passionately teach our junior colleagues and students as we have been taught by those who preceded us.
4. To treat our colleagues and hospital staff with kindness, respect, generosity of spirit, and patience.
5. To foster the excellence and well-being of our residency program by generously offering our time, talent, and energy on its behalf.
6. To support and contribute to the research mission of our medical center, nation, and the world by pursuing new knowledge, whether at the bench or bedside.
7. To promote the translation of the latest scientific knowledge to the bedside to improve our understanding of disease pathogenesis and ensure that all patients receive the most scientifically appropriate and up to date care.
8. To promote responsible stewardship of resources by wisely selecting diagnostic tests and treatments, recognizing that our individual decisions impact not just our own patients, but patients everywhere.
9. To promote social justice by advocating for equitable health care, without regard to race, gender, sexual orientation, social status, or ability to pay.
10. To extend our talents outside the walls of our hospitals and clinics, to promote the health and well-being of communities, locally, nationally, and internationally.
11. To serve as proud ambassadors for the mission of the Rawalpindi Medical University MS Plastic Surgery Program for the remainder of our professional lives.

# **STATUTES**

## 1. **Nomenclature:**

Nomenclature of the Proposed Course The name of degree program shall be MS Plastic Surgery. This name is well recognized and established for the last many decades worldwide.

## 2. **Course Title:**

MS Plastic Surgery

## 3. **Training Centres:**

Departments of Surgery and Allied at Rawalpindi Medical University (RMU).

**Duration of Course:** The duration of MS Plastic Surgery course shall be five (5) years (first two years in Part I and next three years in Part II) with structured training in a recognized department under the guidance of an approved supervisor. The course is structured in three parts..

## 4. **Course structure :** The course is structured in two parts: After admission in MS Plastic Surgery Programme the resident will spend first 06 months in plastic surgery for orientation and next 18 months in the general surgery and will also undertake the mandatory workshops and rotations.

At the end of 2 years, the candidate will take up Intermediate Examination.

During the 3<sup>rd</sup> ,4<sup>th</sup> and 5<sup>th</sup> years of the program, there are two components of the training: -

1. Clinical Training in Plastic Surgery.
2. Research and Thesis writing.

The candidate shall undergo clinical training to achieve educational objectives of MS Plastic Surgery (knowledge and skills) along with rotations in the relevant fields. The clinical training shall be competency based. There shall be generic and specialty specific competencies and shall be assessed by continuous Internal Assessment.

Research Component and thesis writing shall be completed over the three years duration of the course, during stay in plastic surgery. Candidates will spend total time equivalent to one calendar year for research during the training.

Research can be done as one block or it can be done in the form of regular periodic rotation over four years as long as total research time is equivalent one calendar year.

## **Admission Criteria**

Applications for admission to MS Training Programs will be invited through advertisement in print and electronic media mentioning closing date of applications.

Eligibility: The applicant on the last date of submission of applications for admission must possess the:

- i. Basic Medical Qualification of MBBS or equivalent medical qualification recognized by Pakistan Medical & Dental Council.
- ii. Certificate of one year's House Job experience in institutions recognized by Pakistan Medical & Dental Council is essential at the time of interview. The applicant is required to submit House Certificate from the concerned Medical Superintendent that the House Job shall be completed before the Interview.
- iii. Valid certificate of permanent or provisional registration with Pakistan Medical & Dental Council.

## **Registration and Enrolment**

- As per policy of Pakistan Medical & Dental Council the number of PG Trainees/ Students per supervisor shall be maximum 05 per annum for all PG programs including minor programs (if any).
- Beds to trainee ratio at the approved teaching site shall be at least 5 beds per trainee.
- The University will approve supervisors for MS courses.
- Candidates selected for the courses: after their enrollment at the relevant institutions shall be registered with RMU as per prescribed Registration Regulations.

# **AIMS AND OBJECTIVES OF THE COURSE**

## **AIM**

The aim of five years MS Plastic Surgery is to train residents to acquire the competency of a specialist in the field of plastic surgery so that they can become good teachers, researchers and clinicians in their specialty after completion of their training.

## **GENERAL OBJECTIVES**

1. To provide a broad experience in MS Plastic Surgery, including its interrelationship with other disciplines.
2. To enhance medical knowledge, clinical skills, and competence in bedside diagnostic and therapeutic procedures.
3. To achieve the professional requirements to prepare for higher surgical Training in one or more specialty in Plastic Surgery.
4. To cultivate the correct professional attitude and enhance communication skill towards patients, their families and other healthcare professionals.
5. To enhance sensitivity and responsiveness to community needs and the economics of health care delivery.
6. To enhance critical thinking, self-learning, and interest in research and development of patient service.
7. To cultivate the practice of evidence-based medicine and critical appraisal skills.
8. To inculcate a commitment to continuous medical education and professional development.
9. To provide a broad training and in-depth experience at a level for trainees to acquire competence and professionalism of a specialist in Plastic Surgery especially in the diagnosis, investigation and treatment of surgical problems towards the delivery of holistic patient care.
10. To acquire competence in managing acute emergencies and identifying problems in patients referred by primary care and other doctors, and in



selecting patients for timely referral to appropriate tertiary care or the expertise of another specialty.

11. To develop competence in the inpatient and outpatient management of problems and in selecting patients for referral to tertiary care facilities and treatment modalities requiring high technology and/or the expertise of another specialty.
12. To manage patients in regional/District hospitals; to be a leader in the health care delivery team and to work closely with networking units which provide convalescence, rehabilitation and long term care.
13. To encourage the development of skills in communication and collaboration with the community towards health care delivery.
14. To foster the development of skills in the critical appraisal of new methods of investigation and/or treatment.
15. To reinforce self-learning and commitment to continued updating in all aspects of Plastic Surgery.
16. To encourage contributions aiming at advancement of knowledge and innovation in medicine through basic and/or clinical research and teaching of junior trainees and other health related professionals.
17. To acquire professional competence in training future trainees in Plastic Surgery at Rawalpindi Medical University.

## **SPECIFIC OBJECTIVES**

### **(A) Medical Knowledge**

1. The development of a basic understanding of core Plastic Surgery concepts.
2. Etiology, clinical manifestation, disease course and prognosis, investigation and management of common problems.
3. Scientific basis and recent advances in pathophysiology, diagnosis and management of problems.

4. Spectrum of clinical manifestations and interaction of multiple medical diseases in the same patient.
5. Psychological and social aspects of medical illnesses.
6. Effective use and interpretation of investigation and special diagnostic procedures.
7. Critical analysis of the efficacy, cost-effectiveness and cost-utility of treatment modalities.
8. Patient safety and risk management
9. Medical audit and quality assurance
10. Ethical principles and medico legal issues related to illnesses.
11. Updated knowledge on evidenced-based medicine and its implications for diagnosis and treatment of patients.
12. Familiarity with different care approaches and types of health care facilities towards the patients care with medical illnesses, including convalescence, rehabilitation, palliation, long term care, and medical ethics.
13. Knowledge on patient safety and clinical risk management.
14. Awareness and concern for the cost-effectiveness and risk-benefits of various advanced treatment modalities.
15. Familiarity with the concepts of administration and management and overall forward planning for a MS Plastic Surgery.

**(B) Skills**

1. Ability to take a detailed history, gathers relevant data from patients, and assimilates the information to develop diagnostic and management plan.
2. Students are expected to effectively record an initial history and physical examination and follow-up notes as well a deliver comprehensive oral presentations to their team members based on these written documents.

3. Competence in eliciting abnormal physical signs and interpreting their significance.
4. Ability to relate clinical abnormalities with pathophysiologic states and diagnosis of diseases.
5. Ability to select appropriate investigation and diagnostic procedures for confirmation of diagnosis and patient management.
6. Residents should be able to interpret basic as well as advanced laboratory data as related to the disorder/disease.
7. Basic understanding of routine laboratory and ancillary tests including complete blood count, chemistry panels, ECG, chest x-rays, pulmonary function tests, and body fluid cell counts. In addition, students will properly understand the necessity of incorporating sensitivity, specificity, pre-test probability and Bayes laws/theorem in the ordering of individual tests in the context of evaluating patients' signs and symptoms.
8. The formulation of a differential diagnosis with up-to—date scientific evidence and clinical judgment using history and physical examination data and the development of a prioritized problem list to select tests and make effective therapeutic decisions.
9. Assessing the risks, benefits, and costs of varying, effective treatment options; involving the patient in decision-making via open discussion; selecting drugs from within classes; and the design of basic treatment programs and using critical pathways when appropriate.
10. Residents must be able to perform competently all medical and invasive procedures essential for the practice of general Plastic Surgery. This includes technical proficiency in taking informed consent, performing by using appropriate indications, contraindications, interpretations of findings and evaluating the results and handling the complications of the related procedures mentioned in the syllabus.
11. Residents should be instructed in additional procedural skills that will be determined by the training environment, residents practice expectations, the availability of skilled teaching faculty, and privilege delineation.
12. Skills in performing important bedside diagnostic and therapeutic procedures and understanding of their indications. Trainees should acquire

competence through supervised performance of the required number of each of the following procedures during the 5-years training period and should record them in the Trainee's Log Book.

At least 10 times during the five years training period:

- a. Cardiopulmonary resuscitation
- b. Central venous cannulation
- c. Tracheotomy
- d. Venous Cut Down
- e. Endotracheal intubation
- f. Lumbar puncture
- g. Chest drain insertion
- h. Arterial Blood gases sampling

13. Ability to present clinical problems and literature review in grand rounds and seminars.
14. Good communication skills and interpersonal relationship with patients, families, medical colleagues, nursing and allied health professionals.
15. Ability to mobilize appropriate resources for management of patients at different stages of illnesses, including critical care, consultation of medical specialties and other disciplines, ambulatory and rehabilitative services, and community resources.
16. Competence in the diagnosis and management of emergency medical problems, in particular cardio-respiratory problems, organ failures, infection and shock, gastrointestinal bleeding, metabolic disorders and poisoning.
17. Competence in the diagnosis and management of acute and chronic problems as secondary care in a regional/district hospital.
18. Diagnostic skills to effectively manage complex cases with unusual presentations.
19. Ability to implement strategies for preventive care and early detection of diseases in collaboration with primary and community care doctors.
20. Ability to understand medical statistics and critically appraise published work and clinical research on disease presentations and treatment outcomes. Experience in basic and/or clinical research within the training program should lead to publications and/or presentation in seminars or conferences.

21. Practice evidence—based learning with reference to research and scientific knowledge pertaining to their discipline through comprehensive training in Research Methodology
22. Ability to recognize and appreciate the importance of cost-effectiveness of treatment modalities.
23. The identification of key information resources and the utilization of the medical literature to expand one's knowledge base and to search for answer to medical problems. They will keep abreast of the current literature and be able to integrate it to clinical practice.

**(C) Attitudes**

1. The well-being and restoration of health of patients must be of paramount consideration.
2. Empathy and good rapport with patient and relatives are essential attributes.
3. An aspiration to be the team-leader in total patient care involving nursing and allied medical professionals should be developed.
4. The cost-effectiveness of various investigations and treatments in patient care should be recognized.
5. The privacy and confidentiality of patients and the sanctity of life must be respected.
6. The development of a functional understanding of informed consent, advanced directives, and the physician-patient relationship.
7. Ability to appreciate the importance of the effect of disease on the psychological and socio-economic aspects of individual patients and to understand patients' psycho-social needs and rights, as well as the medical ethics involved in patient management.
8. Willingness to keep up with advances in Plastic Surgery and other Specialties.

9. Willingness to refer patients to the appropriate specialty in a timely manner.
10. Aspiration to be the team leader in total patient care involving nursing and allied surgical professionals.
11. The promotion of health via adult immunizations, periodic health screening, and risk factor assessment and modification.
12. Recognition that teaching and research are important activities for the advancement of the profession.

***(D) Other required core competencies:***

**1. PATIENT CARE**

- Residents are expected to provide patient care that is compassionate, appropriate and effective for the promotion of health, prevention of illness, treatment of disease and at the end of life.
- Gather accurate, essential information from all sources, including medical interviews, physical examinations, medical records and diagnostic/therapeutic procedures.
- Make informed recommendations about preventive, diagnostic and therapeutic options and interventions based on clinical judgment, scientific evidence, and patient preference.
- Develop, negotiate and implement effective patient management plans and integration of patient care.
- Perform competently the diagnostic and therapeutic procedures considered essential to the practice of plastic surgery.

**2. INTERPERSONAL AND COMMUNICATION SKILLS**

- Residents are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, families, and other members of health care teams.
- Provide effective and professional consultation to other physicians and health care professionals and sustain therapeutic and ethically sound

professional relationships with patients, their families, and colleagues.

- Use effective listening, nonverbal, questioning, and narrative skills to communicate with patients and families.
- Interact with consultants in a respectful, appropriate manner.
- Maintain comprehensive, timely, and legible medical records.

### 3. **PROFESSIONALISM**

- Residents are expected to demonstrate behaviors that reflect a commitment to continuous professional developmental, ethical practice, an understanding and sensitivity to diversity and a responsible attitude toward their patients, their profession, and society.
- Demonstrate respect, compassion, integrity, and altruism in relationships with patients, families, and colleagues.
- Demonstrate sensitivity and responsiveness to the gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behavior and disabilities of patients and professional colleagues.
- Adhere to principles of confidentiality, scientific/academic integrity, and informed consent.
- Recognize and identify deficiencies in peer performance.
- Understand and demonstrate the skill and art of end of life care.

### 4. **PRACTICE-BASED LEARNING AND IMPROVEMENT**

- Residents are expected to be able to use scientific evidence and methods to investigate, evaluate, and improve patient care practices.
- Identify areas for improvement and implement strategies to enhance knowledge, skills, attitudes and processes of care.
- Analyze and evaluate practice experiences and implement strategies to continually improve the quality of patient practice.
- Develop and maintain a willingness to learn from errors and use errors to improve the system or processes of care.

- Use information of technology or other available methodologies to access and manage information, support patient care decisions and enhance both patient and physician education.

## 5. **SYSTEMS-BASED PRACTICE**

- Residents are expected to demonstrate both an understanding of the contexts and systems in which health care is provided, and the ability to apply this knowledge to improve and optimize health care.
- Understands accesses and utilizes the resources, providers and systems necessary to provide optimal care.
- Understand the limitations and opportunities inherent in various practice types and delivery systems, and develop strategies to optimize care for the individual patient.
- Apply evidence-based, cost-conscious strategies to prevention, diagnosis, and disease management.
- Collaborate with other members of the health care team to assist patients in dealing effectively with complex systems and to improve systematic processes of care.



# Scheme of the Course of MS Plastic Surgery

A summary of five years course in MS Plastic Surgery is presented as under:

<ul style="list-style-type: none"><li>• This part is structured for the 1st and 2<sup>nd</sup> calendar year. The candidate shall undertake clinical training in fundamental concepts of Surgery.</li><li>• One disease statistical review or one research paper in RMU Journal will be mandatory in 1<sup>st</sup> year.</li><li>• In addition one disease statistical review on one research in RMU Journal is mandatory in 2<sup>nd</sup> year.</li><li>• Synopsis topic assignment submission of synopsis technical committee evaluation IRF/ERB synopsis approval must be done in 2<sup>nd</sup> year.</li><li>• The clinical training in Plastic Surgery shall start from 3rd year onwards.</li><li>• At the end of 2<sup>nd</sup> year the examination shall be held in fundamental concepts of Surgery.</li></ul>	<ul style="list-style-type: none"><li>• This part is structured for 3rd, 4th and 5th calendar years in MS Plastic Surgery.</li><li>• It has two components; Clinical and Research.</li><li>• The candidate shall undergo clinical training to achieve educational objectives of MS Plastic Surgery (knowledge &amp; skills) along with rotation in relevant fields. Over the five years duration of the course, candidate will spend total time equivalent to one calendar year for research during the training.</li><li>• Research can be done as one block in 5th year of training or it can be done in the form of regular periodic rotations over five years as long as total research time is equivalent to one calendar year.</li></ul>
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# Accreditation Related Issues Of The Institution

## **1. Faculty**

Properly qualified teaching staff in accordance with the requirements of Pakistan Medical and Dental Council (PMDC)

## **2. Adequate Space**

Including class-rooms (with audiovisual aids), demonstration rooms, computer lab etc.

## **3. Library**

Departmental library should have latest editions of recommended books, reference books and latest journals (National and International).

Accreditation of Plastic Surgery training program can be suspended on temporary or permanent basis by the University, if the program does not comply with requirements for residents training as laid out in this curriculum.

Program should be presented to the University along with a plan for implementation of curriculum for training of residents.

Programs should have documentation of residents training activities and evaluation on monthly basis.

To ensure a uniform and standardized quality of training and availability of the training facilities, the University reserves the right to make surprise visits of the training program for monitoring purposes and may take appropriate action if deemed necessary.

## AIMS AND OBJECTIVES OF THE COURSE

### **AIM**

The aim of five years MS programme in Plastic Surgery is to train residents to acquire the competency of a specialist in the field so that they can become good teachers, researchers and clinicians in their specialty after completion of their training.

### **GENERAL OBJECTIVES**

MS Plastic Surgery training should enable a student to:

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

- f* Manage patients in ways that demonstrate sensitivity to their physical, social, cultural and psychological needs
- f* Recognize disorders amenable to plastic surgical treatment
- f* Effectively manage the care of patients with trauma including multiple system trauma
- f* Effectively recognize and manage complications
- f* Accurately identify the benefits, risks and mechanisms of action of current and evolving treatment modalities
- f* Indicate alternatives in the process of interpreting investigations and in decision-making
- f* Manage complexity and uncertainty
- f* Consider all issues relevant to the patient
- f* Identify risk
- f* Assess and implement a risk management plan
- f* Critically evaluate and integrate new technologies and techniques.

4. Organize diagnostic testing, imaging and consultation as needed:

- f* Select medically appropriate investigative tools and monitoring techniques in a cost-effective and useful manner
- f* Appraise and interpret appropriate diagnostic imaging and investigations according to patients' needs
- f* Critically evaluates the advantages and disadvantages of different investigative modalities

5. Communicate effectively:

- f* Communicate appropriate information to patients (and their family) about procedures, potentialities and risks associated with surgery in ways that encourage their participation in informed decision making
- f* Communicate with the patient (and their family) the treatment options including benefits and risks of each
- f* Communicate with and co-ordinate health management teams to achieve an optimal surgical environment
- f* Initiate the resolution of misunderstandings or disputes

*f* Modify communication to accommodate cultural and linguistic sensitivities of the patient

6. Recognize the value of knowledge and research and its application to clinical practice:

*f* Assume responsibility for self-directed learning

*f* Critically appraise new trends in Plastic Surgery

*f* Facilitate the learning of others.

7. Appreciate ethical issues associated with Plastic Surgery:

*f* Consistently apply ethical principles

*f* Identify ethical expectations that impact on medico-legal issues

*f* Recognize the current legal aspects of informed consent and confidentiality

*f* Be accountable for the management of their patients.

8. Professionalism by:

*f* Employing a critically reflective approach to Plastic Surgery

*f* Adhering with current regulations concerning workplace harassment

*f* Regularly carrying out self and peer reviewed audit

*f* Acknowledging and have insight into their own limitations

*f* Acknowledging and learning from mistakes

9. Work in collaboration with members of an interdisciplinary team where appropriate:

*f* Collaborate with other professionals in the selection and use of various types of treatments assessing and weighing the indications and contraindications associated with each type

*f* Develop a care plan for a patient in collaboration with members of an interdisciplinary team

*f* Employ a consultative approach with colleagues and other professionals

*f* Recognize the need to refer patients to other professionals.

10. Management and Leadership

*f* Effective use of resources to balance patient care and system resources

*f* Identify and differentiate between system resources and patient needs

- f* Prioritize needs and demands dealing with limited system resources.
- f* Manage and lead clinical teams
- f* Recognize the importance of different types of expertise which contribute to the effective functioning of clinical team.
- f* Maintain clinically relevant and accurate contemporaneous records

11. Health advocacy:

- f* Promote health maintenance of patients
- f* Advocate for appropriate health resource allocation
- f* Promote health maintenance of colleagues and self scholar and teacher

## SPECIFIC LEARNING OUTCOMES

On completion of the training programme, Plastic Surgery trainees including those pursuing an academic pathway will be expected to have demonstrated competence in all aspects of the published syllabus. The specific training component would be targeted for establishing clearly defined standards of knowledge and skills required to practice Plastic Surgery at secondary and tertiary care level with proficiency in the Basic and applied clinical sciences, Basic surgical care, intensive care, and complementary surgical disciplines.

### **Medical Knowledge - Goals**

1. Understand the types of medical and surgical problems addressed on the plastic surgery service during your specific rotation. These problems could include:
  - Congenital defects of the head and neck, including clefts of the lip and palate, and craniofacial surgery
  - Neoplasms of the head and neck, including the oropharynx, and endoscopy
  - Craniomaxillofacial trauma, including fractures
  - Aesthetic (cosmetic) surgery of the head and neck, trunk, and extremities
  - Plastic surgery of the breast
  - Surgery of the hand/upper extremities
  - Plastic surgery of the lower extremities
  - Plastic surgery of congenital and acquired defects of the trunk and genitalia
  - Burn management, acute and reconstructive
  - Microsurgical techniques applicable to plastic surgery
  - Reconstruction by tissue transfer, including flaps and grafts
  - Surgery of benign and malignant lesions of the skin and soft tissues
2. Understand conditions that will complicate surgery.
3. Understand the appropriate techniques of tissue handling and skin closure.

### **Medical Knowledge - Objectives**

1. Demonstrate comprehension of pertinent medical issues through presentation of patients to team on morning rounds.
2. Describe symptoms of healthy flaps and replants
3. Describe symptoms of unhealthy flaps and replants
4. Identify medications which may interfere with blood clotting
5. Identify alternatives to blood clotting medications
6. Name laboratory tests useful in the evaluation and management of blood clotting
7. Demonstrate proficiency in appropriate skin closure techniques in operating room
8. Demonstrate proficiency in appropriate tissue handling techniques in operating room
9. Demonstrate proficiency in appropriate suturing techniques in operating room
10. Name laboratory tests useful in the evaluation and management of wound care

**Patient Care - Goals**

1. Learn to deliver responsive, timely care for all inpatients.
2. Understand the appropriate post-operative management of free flaps and replants.
3. Understand the appropriate post-operative management of the patient with a changing course.
4. Learn to synthesize all available information in order to make appropriate
5. clinical decisions.

**Patient Care - Objectives**

1. Demonstrate appropriate tissue handling technique
2. Demonstrate appropriate suturing technique
3. Demonstrate appropriate skin closure technique
4. Demonstrate the ability to make a diagnosis and formulate a surgical plan.
5. Demonstrate the ability to perform suture removal, dressing changes, and wound care.
6. Demonstrate the ability to document all patient encounters with legible chart notes.
7. Demonstrate the ability to accurately check all flaps or replants for any change in color, temperature, capillary refill or bleeding
8. Obtain help from seniors to achieve rapid return to operating room for exploration for any patients who may exhibit change in color, temperature, capillary refill or bleeding of flaps or replants
9. Justify selection of laboratory tests and diagnostic tests for each patient on the
10. service
11. Demonstrate the ability to dictate thorough discharge summaries on all inpatients.

**Practice - Based Learning - Goals**

1. Develop an attitude of responsibility for the patients on the ward, and in so doing develop the skill of self-assessment with the goal of continuous improvement in practice management style.
2. Understand the importance of critically reading and discussing medical literature pertinent to patients on the service.

**Practice - Based Learning - Objectives**

1. Critically discuss performance with respect to care of patients and progress made during rotation with Chief of Service or designee at mid-rotation meeting.
2. At least three times during the rotation, choose a pertinent issue pertaining to a patient on the service, critically evaluate an article from the literature which addresses the problem, and present conclusions to the entire team on rounds.

**Systems-Based Practice - Goals**

1. Understand the importance of supporting medical and ancillary services in the complete and efficient care of the patient.
2. Develop a cost-effective attitude toward patient management.
3. Develop an appreciation for the patients' interests and convenience in care management plans.



### **Systems-Based Practice - Objectives**

1. Facilitate discharge planning by daily communication with inpatient care manager.
2. Describe indications for medical consultation in the pre- and post-operative periods, particularly with respect to these specialties:
  - Cardiology
  - Gastroenterology
  - Pain Management service
  - Interventional Radiology
  - Hematology
  - Infectious Disease
3. Facilitate daily communication with consulting physicians
4. As pertinent for each individual patient, facilitate daily communication with ancillary services, such as:
  - Physical Therapy
  - Occupational Therapy
  - Speech
  - Enterostomal Therapy
  - Nutrition
  - Mental Health
  - Social Services

### **Interpersonal and Communication Skills - Goals**

1. Develop the ability to respectfully and clearly communicate with other healthcare professionals.
2. Learn to present patients to senior residents, fellows, and attending in an organized and precise manner.
3. Learn how to function effectively as a member of a team.
4. Learn to communicate effectively with patients and their families.

### **Interpersonal and Communication Skills - Objectives**

1. Consistently answer nursing questions and pages clearly and effectively.
2. Present patients on inpatient rounds in an organized and concise manner.
3. Present clinic patients to the attending efficiently to facilitate clinic flow.
4. Gain experience in explaining results of evaluations and recommendations for treatment to patients and their families (practice patient education skills).

### **Professionalism - Goals**

1. Demonstrate respect and compassion for patients and professional staff on the wards, in the clinics, and in the operating room.
2. Develop open-mindedness regarding alternative treatments.
3. Understand need for continual self-assessment and improvement.
4. Develop an attitude of responsibility for patient care requests by senior residents.

### **Professionalism - Objectives**

1. Use appropriate speech and tone of voice when speaking to patients, families, and other healthcare professionals.

2. Allow others the chance to speak, and listen attentively when being spoken to.
3. Demonstrate a conscientious approach to patient care by minimizing delay of care and minimizing passage of incomplete tasks to fellow residents.

## **Skills and Procedures**

1. Skin and Soft Tissue Coverage (skin grafts, flaps)
2. Microvascular Reconstruction (Extremity, Breast, Head & Neck etc)
3. Skin Cancers (excisional and reparative surgery involved in treatment)
4. Head and Neck Cancers (tumours of the face, neck and intraoral region)
5. Burns / Sequelae (management of burns and their complications)
6. Hand Surgery and Limb Trauma (management of acute hand injuries, elective and reconstructive surgery, hand rehabilitation, all aspects of amputation)
7. Breast Surgery including Breast Reconstruction
8. Cleft Lip / Palate and Cranio-facial Surgery (including orthodontics, dental and speech therapy)
9. Facial Trauma (soft tissue injuries, maxillofacial traumas including mandibles)
10. Aesthetic Surgery
11. Laser Surgery: Laser License obtained
12. Other congenital Corrections (Ear, Hand, Urogenital etc)
13. Tissue expanders
14. Trunk reconstruction

## **Research Experience**

All residents in the categorical program are required to complete an academic outcomes-based research project during their training. This project can consist of original bench top laboratory research, clinical research or a combination of both. The research work shall be compiled in the form of a thesis which is to be submitted for evaluation by each resident before end of the training. The designated Faculty will organize and mentor the residents through the process, as well as journal clubs to teach critical appraisal of the literature.

## REGULATIONS

### 1. Scheme of the Course

A summary of five years course in MS Plastic Surgery is presented as under:

COURSE STRUCTURE	COMPONENTS	EXAMINATION
Part 1	<p><b>Fundamental concepts in surgery &amp; Basic Medical Sciences:</b> Anatomy,Physiology,Biochemistry,Pathology,Pharmacology,Behavioral sciences and Bio-stats &amp; research methodology. Training in basic clinical techniques of surgery with compulsory rotation for 18 months starting after 06 months of enrollment.</p>	<p>Part I examination at the end of second year of MS plastic surgery program. <b>Written:</b> paper 1 &amp; 2 basic principles of surgery. <b>Oral, Practical/Clinical examination:</b></p> <ul style="list-style-type: none"> <li>• OSCE</li> <li>• Clinical examination (long case, short cases)</li> <li>• Log book</li> </ul>
Part 2	<p><b>Clinical component of Part 2:</b></p> <ul style="list-style-type: none"> <li>• Professional education in Plastic surgery: Training in plastic surgery during 3<sup>rd</sup>, 4<sup>th</sup> &amp; 5<sup>th</sup> year of MS plastic surgery program Three years of training with compulsory and optional rotations in relevant fields</li> </ul> <p><b>Research component of part 2:</b> Research work and thesis writing project must be completed and thesis be submitted before the end of training.</p>	<p>Part II examination in the specialty of Plastic Surgery at the end of fifth year of MS plastic surgery program. <b>Written:</b> paper 1 &amp; 2: problem based questions in the subject <b>Oral, Practical/Clinical examination:</b></p> <ul style="list-style-type: none"> <li>• OSCE</li> <li>• Clinical examination (long case, short cases)</li> <li>• Log book</li> </ul> <p>Part 3 thesis examination with defense at the end of fifth year of MS plastic Surgery program.</p>

### **Part-I Examination**

1. All candidates admitted in MS Plastic Surgery course shall appear in Part-I examination at the end of second calendar year.
2. The examination shall be held on biannual basis.
3. The candidate who fails to pass part-I examination within 3 years shall be dropped from the course.
4. The examination shall have the following components:

a. Written	200 Marks
b. OSCE	50 Marks
c. Clinical examination	100 Marks
d. Log Book Evaluation	80 Marks (40 marks per year)
5. There shall be two written papers of 100 marks each:

Papers 1 & 2: Principles of General Surgery
6. The type of questions shall be of Short/Modified essay type and MCQs
7. Oral & practical/clinical examination shall be held in clinical techniques in General Surgery.
8. To be declared successful in Part-I examination the candidate must secure 60% marks in each component and 50% in each sub-component.
9. Only those candidates, who pass in theory papers, will be eligible to appear in the Oral & Practical/clinical Examination.
10. The candidates, who have passed written examination but failed in oral & practical/ clinical examination, will re-appear only in oral & practical/clinical examination.
11. The maximum number of attempts to re-appear in oral & practical /clinical Examination alone shall be three, after which the candidate shall have to appear in both written and oral & practical/clinical examinations as a whole.
12. To be eligible to appear in Part-I examination the candidate must submit;
  - i. duly filled, prescribed Admission Form to the Controller of Examinations duly recommended by the Principal/Head of the Institution in which he/she is enrolled;

- ii. a certificate by the Principal/Head of the Institution, that the candidate has attended at least 75% of the lectures, seminars, practical/clinical demonstrations;
- iii. a certificate of having passed the Part-I examination;
- iv. Examination fee as prescribed by the University.



8. To be declared successful in Part-II examination the candidate must secure 60% marks in each component and 50% in each sub-component.
9. Only those candidates, who pass in theory papers, will be eligible to appear in the Oral & Practical/ Clinical Examination.
10. The candidates, who have passed written examination but failed in Oral & Practical/ Clinical Examination, will re-appear only in Oral & Practical / Clinical examination.
11. The maximum number of attempts to re-appear in oral & practical /clinical Examination alone shall be three, after which the candidate shall have to appear in both written and oral & practical/clinical examinations as a whole.
12. The candidate with 80% or above marks shall be deemed to have passed with distinction.
13. *Log Book/Assignments:* Throughout the length of the course, the performance of the candidate shall be recorded on the Log Book.
14. The Supervisor shall certify every year that the Log Book is being maintained and signed regularly.
15. The Log Book will be developed & approved by the Advanced Studies & Research Board.
16. The evaluation will be maintained by the Supervisor (in consultation with the Co- Supervisor, if appointed).
17. The performance of the candidate shall be evaluated on annual basis, e.g., 40 marks for each year in five years MS Plastic Surgery course. The total marks for Log Book shall be 200. The log book shall reflect the performance of the candidate on following parameters:
  - Year wise record of the competence of skills.
  - Year wise record of the assignments.
  - Year wise record of the evaluation regarding attitude & behavior
  - Year wise record of journal club / lectures / presentations / clinico-pathologic conferences attended & / or made by the candidate.

### **3. Submission / Evaluation of Synopsis**

1. The candidates shall prepare their synopsis as per guidelines provided by the Advanced Studies & Research Board, available on RMU website.
2. The research topic in clinical subject should have 30% component related to basic sciences and 70% component related to applied clinical sciences. The research topic must consist of a reasonable sample size and sufficient numbers of variables to give training to the candidate to conduct research, to collect & analyze the data.
3. Synopsis of research project shall be submitted by the end of the 3<sup>rd</sup> year of MS program. The synopsis after review by an Institutional Review Committee shall be submitted to the University for consideration by the Advanced Studies & Research Board, through the Principal / Dean /Head of the institution.

### **4. Submission of Thesis**

1. Thesis shall be submitted by the candidate duly recommended by the Supervisor.
2. The minimum duration between approval of synopsis and submission of thesis shall be one year, but the thesis can not be submitted later than 8 years of enrolment.
3. The research thesis must be compiled and bound in accordance with the Thesis Format Guidelines approved by the University and available on website.
4. The research thesis will be submitted along with the fee prescribed by the University.

### **5. Part-II Thesis Examination**

1. All candidates admitted in MS course shall appear in Part-II thesis examination at the end of 5<sup>th</sup> year of their training course.
2. Only those candidates shall be eligible for thesis evaluation who have passed Part I, II (clinical) Examinations.
3. The examination shall include thesis evaluation with defense.



4. The Vice Chancellor shall appoint three external examiners for thesis evaluation, preferably from other universities and from abroad, out of the panel of examiners approved by the Advanced Studies & Research Board. The examiners shall be appointed from respective specialty. Specialists from General Surgery and Allied surgical Disciplines may also be appointed/co-opted, where deemed necessary.
5. The thesis shall be sent to the external examiners for evaluation, well in time before the date of defense examination and should be approved by all the examiners.
6. After the approval of thesis by the evaluators, the thesis defense examination shall be held within the University on such date as may be notified by the Controller of Examinations. The Controller of Examinations shall make appropriate arrangements for the conduct of thesis defense examination in consultation with the supervisor, who will co-ordinate the defense examination.
7. The thesis defense examination shall be conducted by two External Examiners who shall submit a report on the suitability of the candidate for the award of degree. The supervisor shall act as coordinator.

#### ***6. Award of MS Plastic Surgery Degree***

After successful completion of the structured courses of MS Plastic Surgery and qualifying Part-I, Part-II examinations, the degree with title MS Plastic Surgery shall be awarded.

## CONTENT OUTLINE

### **Part I MS Plastic Surgery**

#### **Basic Sciences:**

Student is expected to acquire comprehensive knowledge of Anatomy, Physiology, Pathology (Microbiology), Biochemistry, Pharmacology relevant to surgical practice appropriate for Plastic Surgery

### **1. Anatomy**

- Detailed Anatomy of the organ systems of body, their blood supply, nerve supply, lymphatic drainage and important gross relations to other organs as appropriate for surgical operations
- Developmental Anatomy and associated common congenital abnormalities
- Features of Surface, Imaging and Applied Anatomy within each organ system
- Relate knowledge to assessment of clinical situation or progress of disease condition

#### **CARDIOVASCULAR:**

- Embryogenesis of heart and major vessels, and formation of the lymphatic system
- Common anatomical variations of heart chambers, valves and major vessels
- Surgical anatomy of heart and major arteries + veins in thorax, neck, abdomen and groins

#### **RESPIRATORY:**

- Embryogenesis of trachea and bronchial tree
- Lung development
- Development and defects of diaphragm
- Common anatomical variations of respiratory tree and lungs to include vascular anomalies
- Surgical anatomy of pleura, lung and trachea and bronchial tree

#### **GASTROINTESTINAL TRACT AND ABDOMINAL WALL:**

- Embryogenesis of the GIT to include formation of the solid organs, anorectum, and abdominal wall
- Common anatomical variations in the formation of the GIT and abdominal wall
- Surgical anatomy of the GIT and its relations to other systems

#### **RENAL:**

- Embryogenesis of the upper and lower renal tract to include male and female genital development
- Common anatomical variations of the renal tract and genitalia
- Surgical anatomy of the renal tract, and associated genital structures to include relationships to other systems

**NEUROLOGICAL:**

- Embryogenesis of the brain and spinal cord, and of the supporting structures (skull, vertebral column)
- Common anatomical variations of the brain and spinal cord
- Surgical anatomy of the brain, spinal cord and major somatic nerves (to include relationships to other systems)

**MUSCULO SKELETAL:**

- Embryogenesis of the skeleton and muscle development
- Common anatomical variations of skeleton
- Surgical anatomy of skeleton where relevant to other systems

**ENDOCRINE:**

Development, defects and surgical anatomy of endocrine organs

## **2. Physiology**

- Cellular organization, structure function correlations and physiological alterations in the organ systems of body
- Relate knowledge to assessment of clinical situation or progress of disease condition

**FLUID BALANCE:**

- Basic requirements of fluid and electrolytes at different ages
- Mechanisms of homeostasis
- Influence of disease states
  - renal
  - cardiac
  - gastrointestinal
  - trauma
- Mechanisms of homeostasis
- Abnormalities encountered in disease

**ACID-BASE BALANCE:**

- Basic requirements of fluid and electrolytes at different ages
- Mechanisms of homeostasis
- Influence of disease states

**OXYGEN TRANSPORT:**

- Airway function in health and disease
- Alveolar function and gas exchange
- Effect of disease
  - R.D.S.
  - Infection
  - Barotrauma
  - Prematurity
- Effect of foetal circulation

GASTROINTESTINAL TRACT:

- Motility of different regions of gut
- Secretion and absorption
- Function of sphincter regions
  - G.O. junction
  - Pylorus
  - Ileocaecal region
  - Anorectum
- Defecation and continence

HEPATOBIILIARY FUNCTION AND PANCREATIC FUNCTION:

- Metabolic and synthetic hepatic function
- Bile production and transport
- Exocrine pancreatic function
- Effect of disease on normal function

RENAL TRACT:

- Renal mechanisms for maintenance of homeostasis
- Effect of disease
- Bladder function and continence
- Transitional renal physiology in neonate and young child

GROWTH AND METABOLISM:

- Nutritional requirements at different ages
- Endocrine factors influencing growth
  - thyroid
  - pituitary
  - pancreatic
  - adrenal
  - gonadal
- Effect of disease states including
  - chronic disease
  - trauma
  - response to operation
- Influence and use of parenteral and enteral feeding

AUTONOMIC NERVOUS SYSTEM:

- Differing effects of sympathetic and parasympathetic innervations
- Effects on differing physiological processes

### **3. Pharmacology**

- The Evolution of Medical Drugs
- British Pharmacopia
- Introduction to Pharmacology
- Receptors
- Mechanisms of Drug Action
- Pharmacokinetics
- Pharmacokinetic Process
  - Absorption
  - Distribution
  - Metabolism
  - Desired Plasma Concentration
  - Volume of Distribution
  - Elimination
  - Elimination rate constant and half life
  - Creatinine Clearance
- Drug Effect
  - Beneficial Responses
  - Harmful Responses
  - Allergic Responses
- Drug Dependence, Addiction, Abuse and Tolerance
- Drug Interactions
- Dialysis
- Drug use in pregnancy and in children

## **4.Pathology**

Pathological alterations at cellular and structural level

- Inflammation
- Wound healing
- Cellular injury
- Vascular disorders
- Disorders of growth, differentiation and morphogenesis
- Tumours
- Surgical immunology
- Surgical haematology

Microbiology:

- Surgically important microorganisms
- Sources of infection
- Asepsis and antisepsis
- Sterilization

